

INTERNATIONAL FINANCIAL MANAGEMENT

MCOM

Semester - I

MCOM - 104



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SYLLABI-BOOK MAPPING TABLE

International Financial Management

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Unit II: International Monetary System - Exchange Rate Regimes, International Monetary Fund, European Monetary System, European Monetary Union, World Bank.	Unit 2: International Monetary System (33-62)
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Unit V: Exchange Rate Theories - Purchasing Power Parity Theory, Interest Rate Parity, future spot exchange rate, methods of forecasting exchanges rates.	Unit 5: Exchange Rate Theories (129-149)
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INTRODUCTION

International financial management, as the name suggests, deals with all the financial decisions taken in the area of international business. Expansion in world trade has led to the growth of multinational companies, in the developed countries as well as in developing nations. Their operations have led to a significant increase in the cross-country flow of funds. This two-way flow of funds requires efficient management. This explains the necessity to study international financial management.

Due to the involvement of more than one country in the transaction, financial decisions have become more complicated. So, it is not enough to just decide how much to invest, when to invest and where to invest. It is equally important to adhere to the varying policies of the different countries involved. The funds moving to the developing countries and the funds moving out in the form of interest and amortization payments need to be strictly managed.

The global financial environment is highly volatile in nature, given the widely diverse nature of the economies of the world. The phase of industrialization coupled with globalization has engulfed the majority of countries. This has led to the emergence of new financial instruments, systems, paradigms, and so on. This calls for a specialized study of how the system and the instruments work and further, how these instruments can be used to forecast the trends in perspective of the international scenario.

International finance, in simple words, is related to the financial activities that take place among various countries. It includes elements such as foreign exchange rates, balance of payments, possible risks and the international monetary systems. Since globalization and liberalization have opened the trade routes of countries across the world, they have also led to the need for international finance. In order to facilitate trade amongst countries, it has become vital to gain a clear understanding of the various procedures for doing so and also consider the factors—broadly, social, political and economic—that affect them.

This book, *International Financial Management*, looks at various aspects of managing finances in the international markets. The book is divided into six units that follow the self-instruction mode with each Unit beginning with an Introduction, followed by an outline of the Objectives. The detailed content is then presented in a simple but structured manner interspersed with Check Your Progress questions to test the student's understanding of the topic. A Summary along with a list of Key Terms and a set of Questions and Answers is also provided at the end of each unit for effective recapitulation.

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UNIT 1 INTERNATIONAL FINANCE

Structure

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1.0 INTRODUCTION

International finance is an important factor in the decision-making process of companies. Every aspect of economic activity is affected by it; be it in the form of individuals taking a decision on asset selection, firms taking financial management decisions, fund's managers deciding on markets to deploy funds or when to exit, government deciding to raise funds, central banks dealing with a declining foreign exchange reserve, a financial crisis, a surplus of foreign exchange reserves or commercial banks making asset-liability decision.

International finance can be defined in simple terms as the business taking place between two or more than two countries. The concept has gained significance following the opening up of economies the world over. There has been a consistent increase in international trade over the years due to increase in population and the ever-extending and diverse needs of people. The concept of globalization assumes significance in this regard. This unit will discuss the meaning and importance of international finance and the nature of finance functions in multinational companies. It will also look at the trends in international trade and cross-border financial flows, and other factors, such as, balance of payment, currency convertibility and capital account convertibility.

1.1 OBJECTIVES

After going through this unit, you will be able to:

- Describe the significance of international trade
- Evaluate the finance functions in multinational companies

- Discuss trend in international trade and currency flows
- Explain balance of payment

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1.2 IMPORTANCE OF INTERNATIONAL FINANCE

The international financial environment is based on the international business phenomenon which takes place between two or more than two countries. International business activities include both trading of goods and services as well as the international production of goods and services.

International business may be conducted in the form of international trade; contractual mode like franchising, licensing, management contracts and turnkey projects; and also foreign investment like foreign direct investment (FDI) and foreign institutional investor (FII). In each of these modes, the significance of international financial management is very high. This is because any transaction of goods and services involves a simultaneous transaction of money, which is in foreign currency, either in the form of payment or receipt. Most of the companies today are also going in for mergers and acquisitions, which involve a lot of international financial management and a host of international financial activities. Examples include Tata–Corus, Mittal–Arcelor, Jet Airways–Sahara, and many more.

International finance relates to the transaction of different types of currencies which takes place between different countries as a part of the overall business transactions. These currencies may belong to different countries, and their values of exchange may vary from country-to-country and place-to-place. In many instances, the value or exchange rate may vary between two different banks in the same place.

There are several reasons that lead to fluctuations in the exchange rates between two points of time and between two different places. The reason for fluctuations in exchange rates are the same reasons which are given for differences in the prices of a product at two different places. But the approach is slightly different. A product in the market commands some price. The currency also commands a price in different markets which is known as the exchange rate. But, the exchange rate fluctuates on a day-to-day basis while prices in the commodity market do not vary so frequently.

International finance incorporates all those activities which takes place due to international transactions. These transactions will include financial transactions between governments of two different countries, and foreign exchange transactions between two individuals—both within the country and outside the country. It also includes transactions between two different banks within the country and between two different countries.

Thus, international finance is a compendious expression that takes within its sweep both international trade and international investments. It affects as much the developing nations as it does the developed ones. The absence of a common currency is often an irritant because exchange rate differential often influence and distort international trade. The exporting nations have an upper hand in that, they can choose the currency in which they want to export, and the importing nation has no choice but to find that currency to pay for its imports.

Multinational Companies (MNCs) as a Factor

The growth of MNCs has also led to an increase in the scope of international finance. A multinational corporation is one that has offices or plants or operations located mostly outside its home country, and the majority of its revenue is generated from firms other than the ones in its country, i.e., from around the globe. An MNC is an enterprise that owns and controls production or service facilities outside the country in which it is based (United Nations, 1973). For qualifying as an MNC, the number of countries where the firm operates must be, at least, six (Vernon, 1971; United Nations, 1978). At the same time, the firm must generate a sizable proportion of its revenue from its foreign operations, although no exact percentage has been specified or agreed upon. It is quite obvious that the growth of MNCs has led to the increase in the scope of international finance transactions.

Different multinational companies across the globe form a major part or subset of the international financial environment, when they operate in international financial operations and try to gain advantage from the local or the customized environmental conditions of that market. But the global multinational financial environment also consists of very small, medium and large enterprises or companies which provide support to the overall environment, directly and indirectly.

It would be apt to discuss the specialization of national and international trade in this regard. It refers to the reasons and the theories, which have led to the specialization of countries in the production of particular products. The availability of resources varies from country-to-country because no two countries are endowed with the same kind of natural, man-made or artificial resources. Based on the availability of these resources, every country specializes in the production of specific products, be it goods or services.

There are some classical/traditional and neo-classical/modern theories which explain the process of international trade or business. International trade takes place between two or more than two countries and results in the specialization of specific products by different countries. Because of international trade, the scope of international financial transactions has broadened and the volume is growing at a fast rate too.

Some international trade theories which explain the logic behind trade taking place between two or more nations are Adam Smith's Theory of Absolute Advantage, Ricardian Theory of Comparative Advantage, Heckscher-Ohlin Theory of Opportunity Cost, and some other strategic trade theories. These theories and their application have increased the scope of international finance.

Reasons for the existence of global financial environment

The multinational financial environment comprises of certain factors which have led to its growth and development. These factors are (a) Specialization of national and international trade, (b) Opening up of economies, (c) Globalization of firms, (d) Emergence of new forms of business organizations, (e) Growth of world trade, and (f) Need for a process to develop nations. All the above mentioned factors have led to the emergence of the multinational financial environment. We will now analyse each of these factors one by one.

- (a) **Specialization of national and international trade:** It refers to the reasons and the theories which lead to countries specializing in the production of a particular

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product or products. The availability of resources varies from country to country as every country is not endowed with the same natural, man-made or artificial resources. Based on the availability of these resources, countries specialize in the production of specific products, i.e., goods or services.

There are some classical/traditional and neo-classical/modern theories which explain the occurrence of international trade or business. It is due to the possibility of trade between two or more countries that they specialize in the production of a particular product(s). It also establishes that because of international trade, international financial transactions arise and with an increase in trade, the volume of such transactions is growing at a fast rate.

- (b) Opening of economies:** Earlier when the international trade theories were not established, it was believed, as per the mercantilist point of view, that when two nations traded, one nation gained or earned more profits and that too at the expense of the other. This meant that one nation lost and the other profited from international trade. But this belief was discredited when the classical and neo-classical theories originated, given by different economists at different points of time.

The first economist to have shattered this belief was Adam Smith who advocated that economies should open up to fully gain from international trade. He said that the promotion not only of exports but also of imports of required items was required, so that economies could gain from each other. No country could specialize in the production of all goods and services because of the limited availability of resources, and therefore could enjoy the consumption of even those goods and services which were not or could not be produced in the country only through trade.

The other trade theories also emphasized on laissez faire (opening of economies and free trade) as this would result in the better working and promotion of international financial operations across the world.

Naturally, the developed nations opened earlier and at a faster rate than the developing and the so-called third world nations (Least Developed Countries [LDCs]).

As companies from developed as well as developing nations (more and more companies from developing nations are going multinational) grew, they started entering new countries in search of new markets and in the process, globalized themselves.

- (c) Globalization of firms:** Firms and organizations act as enablers of international trade, and firms globalize because of the three theories in international trade, namely (a) Theory of Competitive Advantage, (b) Theory of Imperfect Markets, and (c) Product Life Cycle Theory.

The theory of competitive advantage states that firms globalize because they possess some unique edge or what is called a competitive advantage over other firms in the industry. This advantage puts them in an advantageous position in comparison to their competitors. It could be because of extensive research and development, an innovative product, better or more efficient utilization of resources, the location of the production plant and the company's office, some unique technological development or some other factors.

The theory of imperfect markets states that because of differences in resource availability among nations, there is a comparative advantage which nations possess

in the production of certain goods and services. There are restrictions in the movement of labour and/or goods and on financial transactions because of which markets are imperfect. Therefore, firms are attracted to set up production facilities at those places where markets are more attractive, and offer their products and services there. This leads to major foreign investment decisions involving enormous financial transactions.

The product life cycle theory states that any new product, which is first introduced in a new country (probably a developed nation), is gradually exported to other less developed countries as competition in the current market intensifies. So, after the new product has reached saturation in the original/initiated country, the same product is introduced in new markets (countries) where it has greater scope for growth and increased market share. This theory explains the internationalization of firms and also supports the increased activities in the international financial management.

- (d) Emergence of new forms of business organizations:** This explains that the forms of organizations have changed and facilitate the access to foreign markets for companies. There may be several forms of organization such as international trade, licensing, franchising, joint ventures, acquisition of existing operations and establishment of new foreign subsidiaries, etc.

All these forms of business organization have made the entry of companies into new and existing foreign markets much faster. This again leads to increased activities in terms of international foreign exchange functions and involves an increased number of transactions taking place at a global level.

- (e) Growth of world trade:** This has led to increased international financial activities because the production capacities of different countries have increased with the growth of companies and firms along with the needs of the increasing population. International trade has grown enormously and is still growing at a high rate.

- (f) Need for a process to develop nations:** The development process of nations may happen as an internalized or externalized process. By internalization of development process we mean that the nation depends totally on internal resources and internal research and development for facilitating growth and development in the economy. These resources may lead to the development of new technology or technically superior processes which may be externalized by specialized nations and exported to less developed nations or even other developed nations. In many countries, especially developing ones, there is a large saving-investment gap, and therefore, the development process has to be externalized with the help of foreign aid and borrowings. Externalization may also take the shape of foreign investment and foreign trade, which is promoted by governments. The growth in the significance of international finance, especially the growth of the multinational financial environment, is taking place because of this externalization of the development process across the globe.

All the six factors as stated above enable the growth of international financial activities at a much faster rate. Consequently, they affect and support a multinational financial environment.

No firm or business enterprise is free from the effects of the elements of the global financial environment like price movements, international buffer stock, fluctuation

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in interest rate or the economic or political environment. Macro and micro level environmental issues can adversely or positively affect the international financial environment.

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The multinational financial environment of a parent company and its subsidiary depends on the multilateral agreements, the banking system and the multilateral agencies available in the given country.

Both the parent as well as the subsidiary company have to consider several environmental factors such as economic, social, legal, financial and cultural aspects related to business.

The environment of domestically-oriented organizations is quite different from that of multinational organization/firms. Both types of companies face political, legal, socio-cultural, financial and physical environments but the difference is that multinational firms/companies have to face the set of environment in more than one country. This implies that the more number of countries a firm/organization operates in or conducts business in, the higher risks it faces as it has to cope with the environments of different countries. The set of environmental factors become more complex with the increase of international business operations in more number of countries.

1.3 FINANCE FUNCTION IN MULTINATIONAL FIRMS

We already know that any international company, which operates outside its own domestic country has to get involved in the import and export of goods and services. When the import and export of goods and services takes place, then the question of payment and receipt arises. Now, there has to be a common currency through which payments or receipts can be made. Therefore, in any international financial transaction one has to first determine the foreign exchange rate. That is the rate at which one unit of domestic currency can be exchanged for another foreign currency. There are several ways in which exchange rate determination can take place. Different ways are adopted by different countries depending upon their economic, monetary and fiscal conditions. In many cases, the exchange rate is determined by the free forces of demand and supply of the currencies in question.

The different types of exchange rate regimes are given in Table 1.1. (The names of the countries against each system of exchange rate determination are not exhaustive.)

There are some institutions which directly or indirectly control the exchange rate regime. One of these institutions is the International Monetary Fund, which controls and fixes the norms and procedure for the different types of exchange rate regimes. All the member countries of IMF follow these norms and procedures.

International financial institutions like the World Bank, IMF, the Asian Development Bank and others form a significant portion of the study of the multinational financial environment along with the different domestic and international banks, the authorized dealers (ADs) who deal in foreign exchange, and also the agents who form a part of the international foreign exchange or financial environment. There is a lot of scope for speculators and people dealing in foreign currency to gain or make profits out of foreign exchange fluctuations which make the environment more interesting and challenging.

Check Your Progress

1. What is international finance?
2. What are the factors that have led to the growth of multinational financial environment?

Table 1.1 Types of Exchange Rate Regimes

Exchange rate regime	Countries
1. Exchange rate arrangements where the currency of another country circulates as the sole legal tender (11 countries)	Ecuador, Panama, Marshall Islands, El Salvador
2. Exchange rate arrangements where members of the currency union share the same legal tender or use their own currency (32 countries)	Antigua, Barbuda, St. Kitts and Nevis, Mali, Grenada, Niger, Senegal, Togo, Germany, Greece, Italy, Spain
3. Currency board arrangements (7 countries)	Bosnia and Herzegovina, Darussalam Bulgaria, China, Hong-Kong, Lithuania
4. Conventional fixed peg arrangements including de facto pegs (41 countries)	Bahamas, Bahrain, Barbados, Bhutan, China, Lesotho, Malaysia, Namibia, Nepal, Venezuela
5. Pegged exchange rates within horizontal bands (5 countries)	Denmark, Slovenia
6. Crawling peg (7 countries)	Cyprus, Hungary, Nicaragua, Solomon Island, Tunisia
7. Managed floating (51 countries)	Afghanistan, Algeria, Angola, Argentina, Egypt, Ethiopia, Ghana
8. Independently floating (35 countries)	Albania, Australia, Brazil, Chile, Israel, Korea, Mexico, Japan, Sri Lanka, Sweden, UK, USA, Switzerland

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Financing function for an MNC is also a challenge. Due to several of sources of funds and avenues of investment available to a financial manager throughout the world, the manager has to worry about the foreign exchange, political risks in positioning funds and in mobilizing cash resources. This diversity of financial sources enables the MNC to reduce its cost of capital but at the same time, maximizes the return on its excess cash resources by investing funds in capital markets. In an organization, finance function can be classified into:

- **Financing decision:** These decision are concerned with creating funds from internal sources or from external sources that are less expensive.
- **Investment decision:** These are determine the distribution of funds over time in such a way that the use all of the shareholders a certain period is maximized.

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- **Dividend decisions:** They are concerned with distribution of profit among shareholders or retaining it as a source of finance.

The reasons for an organization to become a multinational is they want to boost their sales, procure resources at a lower cost and want to diversify to prevent abrupt changes in their sales and profits. It may be difficult to separate the finance functions from production, marketing and other functions, but the functions themselves can be readily identified. A firm attempts to balance cash inflows and outflows while performing these functions. This is called liquidity decision, and we may add it to the list of important finance decisions or functions. Thus finance functions or decisions are divided into long-term and short-term decisions and include:

Long-term financial decisions:

- Long-term asset-mix or investment decision
- Capital-mix or financing decision
- Profit allocation or dividend decision

Short-term financial decisions:

- Short-term asset-mix or liquidity decision

A firm performs finance functions simultaneously and continuously in the normal course of the business. They do not necessarily occur in a sequence. Finance functions call for skilful planning, control and execution of a firm's activities.

Let us note at the outset that shareholders are made better-off by a financial decision that increases the value of their shares. Thus, while performing the finance functions, the financial manager should strive to maximize the market value of shares.

1. Long-term Finance Decisions

The long-term finance functions or decisions have a longer time horizon, generally greater than a year. They may affect the firm's performance and value in the long run. They also relate to the firm's strategy and generally involve senior management in taking the final decision.

Investment decisions: A firm's investment decisions involve capital expenditures. They are, therefore, referred as capital budgeting decisions. A capital budgeting decision involves the decision of allocation of capital or commitment of funds to long-term assets that would yield benefits (cash flows) in the future. Two important aspects of investment decisions are (a) the evaluation of the prospective profitability of new investments, and (b) the measurement of a cut-off rate against which the prospective return of new investments could be compared. Future benefits of investments are difficult to measure and cannot be predicted with certainty. Risk in investment arises because of the uncertain returns. Investment proposals should, therefore, be evaluated in terms of both expected return and risk. Besides the decision to commit funds in new investment proposals, capital budgeting also involves replacement decisions, that is, decision of recommitting funds when an asset becomes less productive or non-profitable.

There is a broad agreement that the correct cut-off rate or the required rate of return on investments is the opportunity cost of capital. The opportunity cost of capital is the expected rate of return that an investor could earn by investing his or her money in financial assets of equivalent risk. However, there are problems in computing the opportunity cost of capital in practice from the available data and information. A decision maker should be aware of these problems.

Financing decisions: A financing decision is the second important function to be performed by the financial manager. Broadly, he or she must decide when, where from and how to acquire funds to meet the firm's investment needs. The central issue before him or her is to determine the appropriate proportion of equity and debt. The mix of debt and equity is known as the firm's capital structure. The financial manager must strive to obtain the best financing mix or the optimum capital structure for his or her firm. The firm's capital structure is considered optimum when the market value of shares is maximized.

In the absence of debt, the shareholders' return is equal to the firm's return. The use of debt affects the return and risk of shareholders; it may increase the return on equity funds, but it always increases risk as well. The change in the shareholders' return caused by the change in the profits is called the financial leverage. A proper balance will have to be struck between return and risk. When the shareholders' return is maximized with given risk, the market value per share will be maximized and the firm's capital structure would be considered optimum. Once the financial manager is able to determine the best combination of debt and equity, he or she must raise the appropriate amount through the best available sources. In practice, a firm considers many other factors such as control, flexibility, loan covenants, legal aspects etc. in deciding its capital structure.

Dividend decisions: A dividend decision is the third major financial decision. The financial manager must decide whether the firm should distribute all profits, or retain them, or distribute a portion and retain the balance. The proportion of profits distributed as dividends is called the dividend-payout ratio and the retained portion of profits is known as the retention ratio. Like the debt policy, the dividend policy should be determined in terms of its impact on the shareholders' value. The optimum dividend policy is one that maximizes the market value of the firm's shares. Thus, if shareholders are not indifferent to the firm's dividend policy, the financial manager must determine the optimum dividend-payout ratio. Dividends are generally paid in cash. But a firm may issue bonus shares. Bonus shares are shares issued to the existing shareholders without any charge. The financial manager should consider the questions of dividend stability, bonus shares and cash dividends in practice.

2. Short-term Finance Decisions

Short-term finance functions or decisions involve a period of less than one year. These decisions are needed for managing the firm's day-to-day fund requirements. Generally, they relate to the management of current assets and current liabilities, short-term borrowings and investment of surplus cash for short periods.

Liquidity decision: Investment in current assets affects the firm's profitability and liquidity. Management of current assets that affects a firm's liquidity is yet another important finance function. Current assets should be managed efficiently for safeguarding the firm against the risk of illiquidity. Lack of liquidity (or illiquidity) in extreme situations can lead to the firm's insolvency. A conflict exists between profitability and liquidity while managing current assets. If the firm does not invest sufficient funds in current assets, it may become illiquid and therefore, risky. It would lose profitability, as idle current assets would not earn anything. Thus, a proper trade-off must be achieved between profitability and liquidity. The profitability-liquidity trade-off requires that the financial manager should develop sound techniques of managing current assets. He or

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she should estimate the firm's needs for current assets and make sure that funds would be made available when needed.

In sum, financial decisions directly concern the firm's decision to acquire or dispose off assets and require commitment or recommitment of funds on a continuous basis. It is in this context that finance functions are said to influence production, marketing and other functions of the firm. Hence finance functions may affect the size, growth, profitability and risk of the firm, and ultimately, the value of the firm. To quote Ezra Solomon, 'The function of financial management is to review and control decisions to commit or recommit funds to new or ongoing uses. Thus, in addition to raising funds, financial management is directly concerned with production, marketing and other functions, within an enterprise whenever decisions are made about the acquisition or distribution of assets.'

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Financial Procedures and Systems

For the effective execution of the finance functions, certain other functions have to be routinely performed. They concern procedures and systems and involve a lot of paper work and time. They do not require specialized skills of finance. Some of the important routine finance functions are:

- Supervision of cash receipts and payments and safeguarding of cash balances
- Custody and safeguarding of securities, insurance policies and other valuable papers
- Taking care of the mechanical details of new outside financing
- Record keeping and reporting

The finance manager in the modern enterprises is mainly involved in the managerial finance functions; executives at lower levels carry out the routine finance functions. Financial manager's involvement in the routine functions is confined to setting up of rules of procedures, selecting forms to be used, establishing standards for the employment of competent personnel and to check up the performance to see that the rules are observed and that the forms are properly used.

The involvement of the financial manager in the managerial financial functions is recent. About three decades ago, the scope of finance functions or the role of the financial manager was limited to routine activities.

1.4 INTERNATIONAL TRADE

Sometimes, the term 'inter-regional trade' is used in the context of internal trade—the trade between different regions of the domestic economy—and also in the context of trade between different groups of nations. Sometimes, the term 'inter-regional trade' is also used for internal trade and for intra-national trade—trade within the domestic economy.

The term inter-regional trade is used in two different contexts.

- (i) Domestic inter-regional trade, i.e., trade between different regions of the domestic economy of a country, e.g., trade between the northern and southern regions of India.

Check Your Progress

3. What is the difference between long-term and short-term finance functions or decisions?
4. What are the various finance functions?

(ii) Inter-regional foreign trade, i.e., trade between different economic regions of the world economy, e.g., trade between the European Union (EU) and the North-American Free Trade Agreement (NAFTA) regions.

- Domestic inter-regional trade refers to trade between different regions of the domestic economy of a country. The domestic economy of a country is often divided into different economic regions on the basis of their main products. For example, the Indian economy can be regionally divided on the basis of agricultural products as the (i) northern region for wheat and sugar production, (ii) southern region for the production of rice and coffee, (iii) eastern region for the production of rice and tea and (iv) western region for wheat production. Internal trade—the sale and purchase of goods—by one region from another is referred to as inter-regional trade. For example, sale of sugar by sugar companies of Uttar Pradesh to the southern states is domestic inter-regional trade.
- Inter-regional foreign trade refers to trade between any two or more economic regions of the world economy if it is regionally divided through trade agreements. For example, the world economy is at present divided into different economic regional groups, e.g., the European Union, South Asian Association of Regional Cooperation (SAARC), Latin American Free Trade Association (LAFTA), European Free Trade Association (EFTA), etc. Foreign trade between any two regions is also referred to as *inter-regional trade*. Note that trade between any two countries of different regions is based on the conditions of the trade agreement or arrangements.

Compared to inter-regional trade, international trade refers to trade—the export and import of goods and services—between the residents of any two nations. India imports petroleum from the Organization of Petroleum Exporting Countries (OPEC) and exports rice and readymade garments to these countries. This is international trade. Although the basis of inter-regional and international trade is essentially the same, a question that arises here is, ‘Why do nations engage in foreign trade?’ or, in other words, ‘Why do nations export and import goods and services?’ This question has been answered in the following section.

1.4.1 Basis of International Trade

The basis of international trade is essentially the gain from trade. The gain appears in the form of a larger supply at lower cost. Let us look at this fact in some detail. All countries have their own resources—natural, human and manmade—which they can utilize to produce goods and services to meet the needs of their population. It is historically evident that countries have been enhancing their resources to meet the increasing requirements of their people. This is how the economy of each country has been functioning. So, why do countries engage in foreign trade? Let us now look at the factors that motivate international trade.

According to Adam Smith, the father of economics, the basis of international trade is essentially the same as that of trade between individuals. This is the eternal human desire to consume more and better goods and services. For example, when it comes to communication between any two persons, people have succeeded in improving this, moving from oral communication to signals, postal services and telephones to increasingly sophisticated mobile phones, the internet and other such facilities. Similarly,

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when you look at long-distance travel, people have progressed from walking, horse riding and bicycles, to car, bus, train, and airplane. It is this kind of desire which motivates people to produce more and better goods and services and improve the means of their production. While human wants are unlimited and go on increasing, their resources remain limited. So, they tend to specialize in production of goods and services they can produce most and at lower cost and exchange these products with the products of others they need. This kind of a natural tendency leads to trade between individuals and also between nations. Let us look at this point in some detail.

Why do people engage in trade?

Going by Smith's reasoning, the 'why trade' question can be answered with reference to trade between individuals. People trade because (i) their resource endowment is limited, (ii) their wants are unlimited, and (iii) they are gain maximizers by nature. Another fact of life is that there is a difference in the limited resource endowments of people. The resource endowments of people refer to their mental and physical abilities, their inherent and acquired skills, and their material means of production (land and capital). These are limited and their nature, quantity and quality differ from person to person. Given their resource endowments, people cannot produce all the goods and services they want to consume at an affordable cost. Besides, it is an empirical fact that while some people can produce a commodity at a lower cost, some others can produce the same commodity only at a much higher cost. This is so because the nature and quality of people's resource endowments differ from person to person. This causes a difference in their cost of production. Since people are, by nature, cost minimizers and/or gain maximizers, they tend to specialize in the production of a commodity whose production they can maximize. This is called division of labour—a natural fact of human life.

Division of labour leads to specialization by individuals in the production of those goods and services that they can produce more efficiently and at a lower cost than others. And, since -people want to consume all the goods and services that they can afford, they exchange their products with one another in order to minimize their cost of consumption. In the words of Smith, 'It is the maxim of every prudent master of a family never to attempt to make at home what it will cost more to make than to buy. The tailor does not attempt to make his own shoes, but buys them from a shoemaker. The shoemaker does not attempt to make his own clothes, but employs a tailor.'¹ This kind of specialization by the shoemaker and the tailor, and the exchange of their products, is gainful to both of them. This leads to trade between them.

Why do nations engage in trade?

The basis of trade between nations is essentially the same as the basis of trade between -individuals. Countries differ in their resource endowments. While some countries are endowed with better natural resources like vast fertile and cultivable land, large mineral deposits, water and forest resources, better climatic conditions, etc., some countries have larger human resources, and some others are better equipped with capital and technology. Most countries have some kind of resource imbalance. For example, India has a large supply of manpower but she lacks capital and technology, minerals and other raw materials. Arab countries are rich in oil, but they are deficient in technology and manpower. Japan is highly advanced in automobile technology, but lacks iron ore and coal, etc. With highly advanced technology and huge capital, the United States is deficient

in manpower. Russia has a vast landmass and highly advanced technology, but lacks agricultural potential. The most important feature that characterizes the distribution of world resources are irregularity and imbalance. Possibly no country can claim self-sufficiency in its resource requirements or a perfectly balanced supply of resources.

The uneven distribution of resources provides the basis of foreign trade. Due to resource endowment differentials, the production potentials, i.e., production capacity and efficiency, vary from country to country. While a country may have a vast potential in the production of some commodities, it may be severely handicapped in the production of others. Most countries, therefore, tend to specialize in the production of commodities that they can produce more efficiently (i.e., at a lower cost) than the others. This leads to international division of labour and, thereby, to a lower cost of production. Lower comparative costs are a strong basis for international trade.

1.4.2 Trends in International Trade

There are two major constituents of global trade—merchandise and services. Merchandise would include manufactured and agricultural goods and fuels and minerals, whereas services include transport, travel, insurance and financial, and computer communication and others.

World trade scenario

Notwithstanding the economic crisis, world trade has increased dramatically over the past decade, rising almost threefold since 2002 to reach about 18 trillion USD in 2011. Developed countries continue to constitute the main players in international trade, however, developing countries account for an increasing share. As of 2011 almost half of world trade has originated from developing countries (up from about one-third in 2002). Although trade growth (both import and export) has been higher for developing countries during the last decade, this trend is slowly abating. Indeed, data for 2010 and 2011 indicate more homogenous rates of import and export growth across all country groupings, with no dramatic differences between developed and developing countries.

Although well performing as a group, developing countries' integration into the global economy has been very varied. East Asia continues to dominate developing country trade flows, while other regions lag far behind. Notably, China has become an increasingly important trading partner for many other developing countries, not only in the East Asian region but also in Sub-Saharan Africa and Latin America. Conversely, the importance of developed countries as major destination markets, although still very important, has in many cases decreased. More in general, increased demand in developing (especially middle income) countries is having important repercussions for international trade flows. This rise in demand paired with fragmentation of production processes has resulted in the rapid increase of South-South trade during the last decade. Of note is that a large share of this increase reflects specific product categories (e.g. electronics) being traded from, to, and especially between East Asian countries.

The importance of regional trade has further differed among developing country regions. While about 40 per cent of East Asian trade is intra-regional, intra-regional trade is also of significance only for Latin America and the Transition Economies (about 20 per cent), whereas for the remaining regions this percentage falls to around 10 per cent or less. For the latter regions, the lack of intra-regional trade is largely due to

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the fact that countries' export (and import) profiles are generally not complementary but overlapping. In practice, without major changes in export and import composition (such as those brought about by fragmentation of production processes and consequent specialization in particular segments) further increase in intra-regional trade is unlikely. Indeed, intra-regional trade over the past five years has tended to grow at a slower pace than extra-regional trade.

Growth patterns of international trade have also varied across categories of products. The last decade has seen an overall increase in the importance of primary (especially energy-related) products in world trade. This has been prompted by a surge in demand in emerging markets and consequent rise in commodity prices. Driven by fragmentation of production processes and higher intra-industry trade, international trade of intermediates products has also increased greatly, reaching about 7 trillion USD in 2011 (up from 2.5 in 2002). Each valued at around 3 trillion USD in 2011, consumers and capital products represent a significant, albeit somewhat declining, share of international trade.

With regard to specific economic sectors, fuels represent the largest (and fastest growing) product category in terms of value of trade (almost 20 per cent of world trade in 2011). Other significant sectors include chemicals, machineries, communication equipment and motor vehicles. In contrast, the importance of agriculture in total merchandise trade is relatively small (less than 10 per cent and less than each of the other major sectors). The position of a country as an exporter of a particular product is generally determined by the availability of natural resources, technological competence and, ultimately, comparative advantage (production and trade costs). While developed countries remain major exporters of most sophisticated goods (e.g. motor vehicles) and some heavy industry (e.g. chemicals), developing countries have increased their market share as exporters of commodities and especially of light manufacturing goods (e.g. apparel and electronics). One important insight is that the export shares (and hence production) of light manufacturing have substantially shifted not only from developed to developing countries but also among developing countries. Still, most of these shifts have occurred to the advantage of East Asian countries.

World trade has reached about 18 trillion USD in 2011, increasing almost threefold since 2002. A large share of the increase in world trade can be attributed to developing countries. High and middle income countries (developed and developing) continue to constitute the main players in international trade, while low income countries' (including LDCs) participation in world trade remains limited.

Trends in India's Foreign Trade

India's merchandise exports reached a level of \$251.14 billion during 2010-11 registering a growth of 40.49 per cent as compared to a negative growth of 3.53 per cent during the previous year. India's export sector has exhibited remarkable resilience and dynamism in the recent years. Despite the recent setback faced by India's export sector due to global slowdown, merchandise exports recorded a Compound Annual Growth Rate (CAGR) of 20.0 per cent from 2004-05 to 2010-11.

India's trade performance

As per IMF's World Economic Outlook October, 2011, world trade recorded its largest ever annual increase in 2010, as merchandise exports surged 14.4 per cent. The volume

of world trade (goods and services) in 2011 is expected to slow down to 7.5 per cent compared to the 12.8 per cent achieved in 2010. Growth in the volume of world trade is expected to decline in 2012 to 5.8 per cent as per IMF projections.

The IMF has moderated its growth projections of world output to 4 per cent in 2012. The advanced economies are expected to grow at 1.9 per cent in 2012 while the emerging and developing economies to grow at 6.1 per cent. The projected growth rates in different countries are expected to determine the markets for our exports.

As per WTO's International Trade Statistics, 2010, in merchandise trade, India is the 20th largest exporter in the world with a share of 1.4 per cent and the 13th largest importer with a share of 2.1 per cent in 2010. The year 2011 has been a difficult year with Japan facing a major earthquake and tsunami, the swelling of unrest in the Middle East oil producing countries, the slowing down of US economy and the Euro area facing major financial turbulence. The current global economic slowdown has its epicenter in the Euro-region but the contagion is being witnessed in all major economies of the world. As a result, India's short-term growth prospects have also been impacted.

Exports: Exports recorded a growth of 40.49 per cent during April-March 2010-11. The government has set an export target of \$300 billion for 2011-12. With merchandise exports reaching \$217.66 billion in 2011-12 (Apr-Dec), the export target of 300 \$billion is expected to be achieved.

Imports: Cumulative value of imports during 2011-12 (Apr-Dec) was \$350.94 billion as against \$269.18 billion during the corresponding period of the previous year registering a growth of 30.4 per cent in \$ terms. Oil imports were valued at \$105.6 billion during 2011-12 (Apr-Dec) which was 40.39 per cent higher than oil imports valued \$75.2 billion in the corresponding period of previous year. Non-oil imports were valued at \$245.35 billion during 2011-12 (Apr-Dec) which was 26.49 per cent higher than non-oil imports of \$194.0 billion in previous year.

Trade balance: The trade deficit in 2011-12 (Apr-Dec) was estimated at \$133.27 billion which was higher than the deficit of \$96.21 billion during 2010-11 (Apr-Dec).

Direction of India's foreign trade

During the period 2011-12 (April– October), the share of Asia and ASEAN region comprising South Asia, East Asia, Mid-Eastern and Gulf countries accounted for 50.69 per cent of India's total exports. The share of Europe and America in India's exports stood at 19.73 per cent and 16.68 per cent respectively of which EU countries (27) comprises 17.81 per cent. During the period, United Arab Emirates (11.82 per cent) has been the most important country of export destination followed by USA (11.51 per cent), Singapore (6.13 per cent), China (5.35) per cent), Hong Kong (4.44 per cent).

Asia and ASEAN accounted for 61.36 per cent of India's total imports during the period followed by Europe (19.27 per cent) and America (8.92 per cent). Among individual countries the share of China stood highest at (12.00 per cent) followed by UAE (7.51 per cent), Switzerland (7.21 per cent), Saudi Arabia (6.06 per cent), the USA (4.78 per cent) Iraq (3.85 per cent), Germany (3.25 per cent), Nigeria (3.25 per cent), Indonesia (3.06 per cent), Australia (2.96 per cent).

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1.4.3 Cross-border Financial Flows

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Global capital flows have multiplied many times over in recent years, mainly between advanced economies but increasingly also to emerging markets, reflecting the general reduction in regulatory and informational barriers.

Capital flow liberalization has been part of the development strategy in several countries, in recognition of the benefits that such flows can bring. At the same time, capital flows carry risks, as they can be volatile and their size can be large relative to domestic markets. Because capital flows have a bearing on economic and financial stability in both individual economies and globally, an important challenge for policymakers is to develop a coherent approach to capital flows and the policies that affect them.

Policies including macroeconomic and structural policies, supervisory and regulatory frameworks, and measures are specifically designed to limit capital flows. The latter measures are referred to as capital flow management measures (CFMs). The assessment of whether a measure is designed to limit capital flows would need to take into account country—specific circumstances, including the overall context in which the measure was introduced.

Capital flows: Trends and composition

Capital flows have grown significantly over the last two decades in both size and volatility. Gross capital flows have occurred predominantly among AEs, although net capital flows have been significant among both advanced and emerging economies.

In particular, net flows to emerging economies are larger as a proportion of each economy's GDP than those to AEs. Global gross flows have increased dramatically, from an average of less than 5 per cent of global GDP during 1980—99 to a peak of about 20 per cent by 2007. Volatility has also grown, as flows dropped sharply in the aftermath of the global crisis, followed by a moderate recovery.

Capital flows to emerging economies have historically mainly comprised foreign direct investment (FDI), although portfolio and 'other investment' (mainly bank-related) have increased substantially since 2003.

Indeed, the bulk of the increase in global capital flows during 2003-2007 comprised short-term inflows, including both portfolio and other investment. Debt flows have historically proven more volatile and risky for the financial system than have FDI and portfolio equity flows.

The process of global financial integration manifests itself in steadily rising cross-border financial flows and the accumulation of large and rising foreign assets and liabilities. These can take the form of, for instance, portfolio investment in bonds or equities, foreign direct investment in enterprises, or loans between residents of different countries

Taken together, total cross-border financial flows are thus an aggregate measure of the size of transactions in financial assets, and, more generally, of the intensity of financial linkages between different economies. Between 1980 and 2007, before the outbreak of the global financial crisis, global foreign assets and liabilities grew six-fold, from around 60 per cent of world GDP to more than 360 per cent of world GDP – corresponding to average annual growth in excess of 10 per cent of world GDP. Over the same period gross global financial flows grew at an equally fast pace, rising from 6 per cent of world GDP in 1980 to 36 per cent of world GDP in 2007. Although global

trade in assets, measured thus, still falls short of trade in goods and services, the latter increased over the same period at a much lower rate, from around 40 per cent of world GDP in 1980 to roughly 50 per cent of world GDP in 2007.

During the global financial crisis world trade in both goods and financial assets collapsed. Global cross-border investment, as measured by global asset and liability financial flows, plunged from over USD 20 trillion (more than 35 per cent of world GDP) in 2007 to around USD 1.5 trillion (less than 5 per cent of world GDP) in the following year. Since then global cross-border investment has steadily recovered and the annual value of international transactions in financial assets currently exceeds USD 10 trillion. This indicates that the crisis has only temporarily halted the process of increasing financial integration and that the global economy is likely in the future to continue reaping the sizeable benefits that international financial integration can offer for partaking economies.

A range of policies is needed to reap the benefits of more open capital flows while managing the risks. Strengthening and deepening financial markets, and improving countries' institutional capacity, would help improve their ability to handle capital flows. Capital flows, both inward and outward, generally warrant adjustments in macroeconomic variables, including the real exchange rate, and policies need to facilitate these adjustments. Volatile capital flows can give rise to macroeconomic and financial stability risks. The appropriate combination of policies for addressing these risks would depend upon country circumstances, and the toolkit would include macroeconomic and financial policies. Capital flow measures are a part of the toolkit and their use is appropriate under certain conditions, but they should not substitute for warranted macroeconomic adjustment. When capital flows contribute to systemic financial risks, CFMs in combination with macro-prudential measures more broadly can help to safeguard financial stability, although their costs need also to be taken into account.

1.4.4 Gains from International Trade

Two of the basic questions that the theory of international trade has to answer are: Who gains from the trade and what determines the pattern of trade? It is evident that international trade is beneficial, when countries sell goods and services to one another; this is always to their mutual benefit. The range of circumstances under which international trade is beneficial is much wider than expected. It is also observed that two countries can trade to their mutual advantage. When one of them is more efficient than the other at producing everything and producers in the less efficient economy can compete only by paying lower wages. According to the classical economists, the gains from trading are noted that, as long as cost conditions differ between countries, at least one and probably both countries will gain. These questions and answers contain the essence of the theory of comparative advantage.

Gains from trade indicates that first, trade allows each country to consume at a point that lies beyond its ability to produce. This is a gain from trade as long as more consumption is desirable. Secondly, trade allows each country to achieve higher community indifference. Countries, whose relative labour productivities differ across industries, will specialize in the production of different goods. There is also another argument by economists that both countries derive gains from trade from this specialization, this mutual gain can be demonstrated in alternative ways.

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One way is to show that specialization is beneficial to compete in the international market and to think of trade as an indirect method of production, to cater to the world market. If a country produces wine directly with high expenses and cheese with low expenses, world would allow it to trade wine with cheese; to 'produce' wine by producing more cheese and then trading cheese for wine. Economists say that this indirect method of 'producing' a gallon of wine is more efficient than the method of direct production. In other words a nation should specialize in production of and export the commodity in which its absolute disadvantage is smaller and import the commodity in which its absolute advantage is greater.

However, the use of community indifference curves to show national gains from trade, may hide the fact that opening trade actually hurts some groups while bringing gains to others. How much each country gains from trade depends on the international price ratio in the ongoing international trade equilibrium. Individuals benefit from receiving high prices for the things that they sell and paying low prices for the things they buy, similar principle applies to countries. A country gains more from trade, if it receives a higher price for its exports relative to the price that it pays for its imports.

For each country, the gains of trade depend on the terms of trade (a country's terms of trade) are the prices of its export goods, relative to the price of its import goods. Trade provides benefits by allowing countries to export goods, whose production makes relatively heavy use of resources that are locally scarce. While nations generally gain from international trade, however, it is quite possible that international trade may hurt particular groups within nations—in other words, international trade will have strong effects on the distribution of income. Many commentators attribute that the development of international trade is an important task for international economics.

One of the central assumptions of classical economists was that, production was fully mobile within countries but not at all mobile between countries. International economic analysis was distinguished by the novel assumption of factor of immobility. Among other things, modern theory has proved that, trade alone will lead to a complete equalization of factor prices. Even in the absence of factor movements, if only goods can be traded freely, wages will be equalized. A study of modern trade theory also helps the student understand one of the basic principles of economics, that of general equilibrium.

1.5 BALANCE OF PAYMENTS

It is important to understand the concept of balance of payment (BOP) as foreign exchange market and exchange rates are connected with the position and trends of BOP of a country. BOP evolves due to the trading between the inhabitants of one country with the rest of the world. BOP records international trade and capital flows, but it does not explain the reasons for the flow.

BOP is an accounting system that measures all economic transactions between residents (including government) of one country and residents of all other countries. Economic transactions include exports and imports of goods and services, capital inflows and outflows, gifts and other transfer payments and changes in a country's international reserves. It has been well defined by Kindleberger as 'a systematic record of all economic transactions between the residents of the reporting country and residents of foreign

Check Your Progress

5. What is the difference between domestic inter-regional trade and inter-regional foreign trade?
6. Name the constituents of global trade.
7. What was WTO's projection about India's trade trend in 2010?

countries during a given period of time'. Normally the period is one year. These transactions are between residents of one country with those of other country.

We need to understand the difference between an economic transaction and a commercial transaction. An economic transaction is an exchange of value or transfer of a title to a good or an asset; whereas, a commercial transaction is an exchange of good or service for money that will result in payment in currency leading to financial flows. For example, when we buy a share or property, it is transferred to our name but when we buy clothes or food items, we only pay money but there is no transfer of title.

BOP has the following characteristics:

- Is the systematic record of all economic transactions with the rest of the world
- Is related to period of time
- Includes the Balance of Trade (BOT) in it
- Includes all transactions current as well as capital
- Includes the receipts and payments of the country
- Is just like a balance sheet
- Is based on double entry book keeping system
- Is not balanced generally it contains some induced transactions for make it balanced and these transactions done deliberately

BOP is important for business because a foreign company will be influenced by it. As it will have the impact on GNP, employment, inflation, exchange rates, interest rates and many other macroeconomic variables. The major reasons for the interest of the MNCs can be because of the following reasons:

- The BOP helps to forecast a country's market potential. If there is surplus of BOP, the country will be able to import goods and services, giving bright prospects for MNCs. If there is a deficit BOP, it will present a gloomy picture for the exporters who were interested in that country.
- BOP is an important indicator of pressure on a country's foreign exchange rate.
- Deficits in the country's BOP indicate future controls on outgoing capital movements such as payment of dividends, fees and interest to foreign firms and investors. MNC will avoid such a country.

The other term that is used with BOP is Balance of Trade (BOT). It refers to the difference in value of imports and exports of commodities only.

- If imports and exports are exactly equal we have balanced trade.
- If value of exports exceeds value of imports we have favourable balance of trade.
- If value of imports exceeds value of exports, the country is said to have deficit or adverse balance of trade.

1.5.1 Components of BOP

Three types of international transactions are recorded in the BOP, they are as follows:

- Exports or imports of goods or services in the current account

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- Purchases or sales of financial assets in the financial account
- Transfer of wealth between countries in the capital account

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Current account

The current account records trade in goods and services, as well as transfer payments. It is divided into merchandise trade balance, the service balance and the balance on unilateral transfers. All the entries that are made in these accounts are of current value and they do not give rise to any future claim. A surplus in the current account represents an inflow of funds while a deficit represents an outflow of funds. The detail of these three sub-categories is presented as follows:

- **Merchandise trade:** It includes the balance between exports or imports of goods such as machinery, electronic goods, cars, etc. A surplus balance of merchandise trade happens when exports are greater in value than imports. A deficit in balance of merchandise occurs when imports exceed exports.
- **Invisibles:** These include Services like Payments for legal assistance, tourists' expenditures, and shipping fees, royalty payments and interest payments. International interest and dividend payments and the earnings of domestically owned firms operating abroad
- **Unilateral Transfers:** These include remittances, gifts and grants by both government and private sector. Government transfers include money, goods and services sent as an aid to other countries in the hour of need. Private gifts and grants include personal gifts of all kinds

Capital account

It is an accounting measure of the total domestic currency value of financial transactions between domestic residents and the rest of the world over a period of time. This account consists of loans, investments and other transfers of financial assets and the creation of liabilities. It includes financial transactions associated with international trade as well as flows associated with portfolio shifts involving the purchase of foreign stocks, bonds and bank deposits. It includes three categories: direct investment, Portfolio investment and other capital flow. The detail of these three sub-categories is presented as follows:

Direct investment: It occurs when the investor acquires equity such as purchase of stocks, acquisition of entire firms or the establishment of new subsidiaries. FDI takes place when the firms tend to take advantage of various market imperfections. Firms also undertake FDI when the expected returns from foreign investment exceed the cost of capital, allowing for foreign exchange and political risks. The expected returns from the foreign profits can be higher than those from domestic projects due to lower material and labour costs, subsidized financing, investment tax allowances, exclusive access to local markets etc.

Portfolio investment: This represents the sales and purchases of foreign financial assets such as stocks and bonds that do not involve a transfer of management control. A desire for return, safety and liquidity in investments is the same for international and domestic portfolio investors. International portfolio investments have seen a boom in the recent years as the investors have become aware about the risk diversification that can

be reduced if they invest in various financial assets globally. The increased returns from the foreign markets have also given a boost to such category of investors.

Capital flows: It represents the claim with a maturity of less than one year. Such claims include bank deposits, short-term loans, short-term securities, money market investment, etc. These investments are sensitive to both changes in relative interest rates between countries and the anticipated change in the exchange rate. Let us understand with the help of an example. If the interest rate increases in India then it will experience a capital inflow as investors would like to take advantage of the situation.

3. Official reserve account

Official reserves are government owned assets. This account represents only purchases and sales by the RBI. The changes in official reserves are necessary to account for the deficit or surplus in the BOPs.

BOP is kept on a double entry book-keeping system with credits and debits of equal size. For every transaction, there is a corresponding entry on both credit and debit sides. BOP is neither an income statement nor a balance sheet. It is a statement of sources and uses of funds that reflects changes in assets, liabilities and net worth during a specified period of time. Decreases in assets and increases in liabilities or net worth represent credits or sources of funds. Increases in assets and decreases in liabilities or net worth represent debits or uses of funds. Sources of funds include exports of goods and services, investment and interest earnings, unilateral transfers received from abroad and loans from foreigners. Uses of funds include imports of goods and services, dividends paid to foreign investors, transfer payments abroad, loans to foreigners and increase in reserve assets.

BOP accounting principles regarding debits and credits are as follows:

- (1) Credit transactions (+) are those that involve the receipt of payment from foreigners.

The following are some of the important credit transactions:

- (i) Exports of goods or services
- (ii) Unilateral transfers (gift) received from foreigners
- (iii) Capital inflows

- (2) Debit transactions (–) are those involve the payment of foreign exchange, i.e., transactions that expend foreign exchange. The following are some of the important debit transactions:

- (i) Import of goods and services
- (ii) Unilateral transfers (gift) received from foreigners
- (iii) Capital inflows

Since the BOP statements is drawn up in terms of debits and credits based on a system of double-entry book-keeping, if all entries are made correctly, the total debits must equal total credits. The debit or payment side of BOP accounts of a country represents the total of all the uses made out of the total foreign exchange acquired by a country during the given period, while the credit or the receipt side represents a the sources from which this foreign exchange was acquired by the country in the same period. The sides as such necessarily balance.

NOTES

Performa in which Indian BOPs are presented by the RBI

Particular, Credit, Debit, Net

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A. Current Account

- (1) Merchandise
 - (a) Exports (on f.o.b basis)
 - (b) Imports (on c.i.f basis)
- (2) Invisibles (a+b+c)
 - (a) services
 - (i) Travel
 - (ii) Transportation
 - (iii) Insurance
 - (iv) Government not included elsewhere
 - (v) Miscellaneous
 - (b) transfers
 - (i) Official
 - (ii) Private
 - (c) investment income

Total Current account (1+2)

B. Capital account

- (1) Foreign investment (a+b)
 - (a) In India
 - (i) Direct
 - (ii) Portfolio
 - (b) Abroad
- (2) Loans (a+b+c)
 - (a) External Assistance
 - (i) By India
 - (ii) To India
 - (b) Commercial Borrowings (MT and LT)
 - (i) By India
 - (ii) To India
 - (c) Short-term To India
- (3) Banking capital (a+b)
 - (a) Commercial Banks
 - (i) Assets
 - (ii) Liabilities
 - (iii) Non-resident Deposits
 - (b) Others
- (4) Rupee Debt service
- (5) Other capital

Total Capital Account (1+2+3+4+5)

C. Errors and Omissions**D. Overall balance (A+B+C)****E. Monetary Movements (i + ii)**

(ii) I.M.F. (iii) Foreign Exchange Reserves (Increase–/Decrease+)

BOP Equilibrium and Disequilibrium

BOP of a country is said to be in equilibrium when the demand for foreign exchange is equivalent to the supply of it. BOP is in disequilibrium when there is a deficit in the BOP, the demand for foreign exchange exceeds the supply for it.

BOP disequilibrium can be corrected by borrowing from various institutions or countries. When a country borrows from international institutions Like IMF, World Bank, Asian bank it is called as multilateral borrowings and when it borrows governments of other countries, it is called as bilateral borrowings.

1.5.2 Currency Convertibility

Currency convertibility refers to the freedom to convert the domestic currency into other internationally accepted currencies and vice versa. Currency convertibility is the capability to exchange money for gold, any other asset or any other currency. Convertibility in that sense is the obverse of controls or restrictions on currency transactions.

It is the ease with which a currency may be exchanged for a foreign currency. There are some countries where the government is not in a position to offer free currency convertibility because their reserve of hard currency is less. These countries restrict the currency convertibility. Let us first understand the types of currency convertibility. There are broadly four categories of convertibility, which are as follows:

- 1. External convertibility:** When a non-resident can freely exchange all the holdings of the currency into any foreign currency (other than the home currency) at the prevailing market exchange rate, then that currency is said to be externally convertibility.
- 2. Internal convertibility:** When there are no restrictions on a country to convert their home currency to any foreign currency.
- 3. Current account convertibility:** This is used by developing countries by three approaches.
- 4. Capital account Convertibility:** It is freedom given to a country to convert the local financial assets into foreign assets in any form.

The basic requirements for currency convertibility are as follows:

- An appropriate exchange rate
- An adequate level of international liquidity
- Sound macro-economic policies, including the elimination of any monetary overhang
- An environment in which economic agents have both the incentives and the ability to respond to market prices, which in turn should be free of major changes

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1.5.3 Currency Devaluation

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It means reduction in the value of a currency w.r.t. other monetary units in a fixed exchange rate system. We cannot use depreciation and devaluation in exchange of one another. Depreciation is the unofficial decrease in the exchange rate in a floating exchange rate system. The opposite of devaluation is called revaluation.

When a government fixes an exchange rate, it indicates that all necessary actions have been taken to check that the currency will not change value in relation to other countries' currencies. Government is able to manage the exchange rate by purchase and sale of their own currencies. When a country's exchange rate is determined in a competitive market without any commitment by the government to maintain any fixed rate, the country is said to have a flexible exchange rate regime. Devaluation makes the domestic currency cheaper in comparison to other currencies. There are two effect of devaluation. First is that country's export less expensive for foreigners and secondly, it makes foreign product more expensive for the consumers in the host country.

Devaluation has the following impacts:

- It increases the effect of inflation because the prices of imports increase.
- Devaluation is seen as a sign of economic weakness.

Devaluation has both advantages and disadvantage that have been discussed as follows:

- The country can make use of devaluation if the demand for its products is inelastic.
- It can increase supply in response to a higher demand without increasing the price of the exported goods.
- It will make the BOP favourable if exports are increased and imports are reduced.
- It can also increase domestic employment.

The disadvantages are as follows:

- Devaluation discourages the inflows of goods and services
- It is harmful effect on the economy.
- Devaluing country cannot pay for all its costly imports so they have to use foreign debt.
- The country will have to import a large number of factors of production that are not available in the country.

1.5.4 Capital Account Convertibility

While current account convertibility refers to freedom in respect of 'payments and transfers for current international transactions', capital account convertibility (CAC) would mean freedom of currency conversion in relation to capital transactions in terms of inflows and outflows. Article VIII of the International Monetary Fund (IMF) puts an obligation on a member to avoid imposing restrictions on the making of payments and transfers for current international transactions. Members may cooperate for the purpose of making the exchange control regulations of members more effective. The cross-country experience with capital account liberalization suggests that countries, including those which have an open capital account, do retain some regulations influencing inward

and outward capital flows. In simple language what this means is that CAC allows anyone to freely move from local currency into foreign currency and back.

It is associated with changes of ownership in foreign/domestic financial assets and liabilities and embodies the creation and liquidation of claims on, or by, the rest of the world. CAC can be, and is, coexistent with restrictions other than on external payments

Revenue account

Revenue is the total amount received by a business or recognized as earned when the business sells something, usually services and goods. In modern accountancy, revenue is recorded when it is earned not when the cash is received from customers. For example when a phone service provider records revenue when calls are made not at the time when you pay the bills. This principle is known as revenue recognition principle.

There are two types of revenues—operating and non-operating revenue.

- Operating revenues are those that originate from main business operations. For example, sales.
- Non-operating revenues are earned from some side activity. For example: interest revenue, rent revenue (except in case where the business' main industry is renting industry).

Following are the common revenue accounts:

- **Revenue/sales/fees:** These accounts are used interchangeably to record the main revenue amounts. However, most companies/businesses give their revenue account a more specific name like: fees earned, service revenue, etc.
- **Interest revenue:** It is used to record the interest earned by the business.
- **Rent revenue:** It is the revenue from buildings or equipment of the business on rent.
- **Dividend revenue:** It is used to record the dividend earned on the stock of other companies which is owned by the business.

Following accounts are called contra revenue accounts because they have exactly opposite characteristics of revenue accounts. Important contra revenue accounts are:

- **Sales returns:** Sometimes goods are returned by the customers for some defect or due to some other reason. These are recorded in sales returns account which is a contra sales account.
- **Sales discounts:** This account records the discounts given to customer on the gross amount.

1.6 SUMMING UP

- International finance can be defined in simple terms as the business taking place between two or more than two countries.
- International business may be conducted in the form of international trade; contractual mode like franchising, licensing, management contracts and turnkey projects; and also foreign investment like foreign direct investment (FDI) and foreign institutional investor (FII).

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Check Your Progress

8. What is balance of payment?
9. How is BOP classified?
10. State the types of revenue.

NOTES

- The growth of MNCs has also led to an increase in the scope of international finance.
- Different multinational companies across the globe form a major part or subset of the international financial environment, when they operate in international financial operations and try to gain advantage from the local or the customized environmental conditions of that market.
- The product life cycle theory states that any new product, which is first introduced in a new country (probably a developed nation), is gradually exported to other less developed countries as competition in the current market intensifies.
- The long-term finance functions or decisions have a longer time horizon, generally greater than a year.
- A firm's investment decisions involve capital expenditures. They are, therefore, referred as capital budgeting decisions.
- A financing decision is the second important function to be performed by the financial manager. Broadly, he or she must decide when, where from and how to acquire funds to meet the firm's investment needs.
- A dividend decision is the third major financial decision. The financial manager must decide whether the firm should distribute all profits, or retain them, or distribute a portion and retain the balance.
- Notwithstanding the economic crisis, world trade has increased dramatically over the past decade, rising almost threefold since 2002 to reach about 18 trillion USD in 2011.
- As of 2011 almost half of world trade has originated from developing countries (up from about one-third in 2002).
- The last decade has seen an overall increase in the importance of primary (especially energy-related) products in world trade.
- With regard to specific economic sectors, fuels represent the largest (and fastest growing) product category in terms of value of trade (almost 20 per cent of world trade in 2011).
- India's merchandise exports reached a level of \$251.14 billion during 2010-11 registering a growth of 40.49 per cent as compared to a negative growth of 3.53 per cent during the previous year.
- Capital flow liberalization has been part of the development strategy in several countries, in recognition of the benefits that such flows can bring.
- Capital flows have grown significantly over the last two decades in both size and volatility. Gross capital flows have occurred predominantly among AEs, although net capital flows have been significant among both advanced and emerging economies.
- BOP is important for business because a foreign company will be influenced by it.
- Portfolio investment represents the sales and purchases of foreign financial assets such as stocks and bonds that do not involve a transfer of management control.

- Currency convertibility refers to the freedom to convert the domestic currency into other internationally accepted currencies and vice versa. Currency convertibility is the capability to exchange money for gold, any other asset or any other currency.

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1.7 KEY TERMS

- **Financing decision:** The decisions are concerned with creating funds from internal sources or from external sources that are less expensive.
- **International trade:** It refers to trade, the export and import of goods and services, between residents of any two nations.
- **Current account:** The current account records trade in goods and services, as well as transfer payments.
- **Capital account:** It is an accounting measure of the total domestic currency value of financial transactions between domestic residents and the rest of the world over a period of time.

1.8 ANSWERS TO ‘CHECK YOUR PROGRESS’

1. International finance incorporates all those transactions which happen due to the international transactions. These transactions will include financial transactions between governments of two different countries, and foreign exchange transactions between two individuals—both within the country and outside the country. It also includes transactions between two different banks within the country and between two different countries.
2. The multinational financial environment comprises of certain factors which have led to its growth and development. These factors are (a) specialization of national and international trade, (b) opening up of economies, (c) globalization of firms, (d) emergence of new forms of business organizations, (e) growth of world trade, and (f) need for a process to develop nations.
3. The long-term finance functions or decisions have a longer time horizon, generally greater than a year. They may affect the firm’s performance and value in the long run. Short-term finance functions or decisions involve a period of less than one year. These decisions are needed for managing the firm’s day-to-day fund requirements.
4. In any organization, finance function can be classified into:
 - **Financing decision:** These decision are concerned with creating funds from internal sources or from external sources that are less expensive.
 - **Investment decision:** These are determine the distribution of funds over time in such a way that the use all of the shareholders a certain period is maximized.
 - **Dividend decisions:** They are concerned with distribution of profit among shareholders or retaining it as a source of finance.

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5. Domestic inter-regional trade is the trade between different regions of the domestic economy of a country, e.g., trade between the northern and southern regions of India. And, inter-regional foreign trade is trade between different economic regions of the world economy, e.g., trade between the European Union (EU) and the North-American Free Trade Agreement (NAFTA) regions.
6. There are two major constituents of global trade—merchandise and services.
7. As per WTO's International Trade Statistics, 2010, in merchandise trade, India is the 20th largest exporter in the world with a share of 1.4 per cent and the 13th largest importer with a share of 2.1 per cent in 2010.
8. Balance of payment is an accounting system that measures all economic transactions between residents (including government) of one country and residents of all other countries.
9. Balance of payment is classified into three categories:
 - (i) Exports or imports of goods or services in the current account
 - (ii) Purchases or Sales of financial assets in the financial account
 - (iii) Transfer of wealth between countries in the capital account
10. There are two types of revenues—operating and non-operating revenue.
 - Operating revenues are those that originate from main business operations. For example, sales.
 - Non-operating revenues are earned from some side activity. For example: interest revenue, rent revenue (except in case where the business' main industry is renting industry).

1.9 QUESTIONS AND EXERCISES

Short-Answer Questions

1. What do you understand by international finance?
2. What are the finance functions of MNCs?
3. Why do countries indulge in international trade?
4. Write a note on India's foreign trade trend.
5. What do you understand by cross-border financial flow?
6. What is the significance of balance of payment to a country?
7. Briefly state the nature of financing decisions.
8. What kinds of financial procedures and systems are used by a firm?

Long-Answer Questions

1. Discuss the significance of international finance.
2. How do companies draw up their finance plans?
3. What has been the trend of global trade in the past five years? Discuss.
4. Discuss the composition and trend of capital flow.

5. Explain balance of payment and currency convertibility. Give examples wherever possible.
6. Discuss dividend decision?

1.10 REFERENCES AND SUGGESTED READINGS

- Rajwade, A. V. 1995. *Foreign Exchange, International Finance and Risk Management*, New Delhi: Academy of Business Studies.
- Apte, P. G. 2010. *International Financial Management*. Noida: Tata McGraw-Hill.
- Bhalla, V. K. & Shivaramu, S. 1996. *International Business: Environment and Management*. New Delhi: Anmol.
- Baker James C. 1998. *International Finance: Management, Market and Institutions*. New Jersey: Prentice Hall.
- Haskin Mark E. 1996. *International Financial Reporting and Analysis*, Chicago: Irwin.

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UNIT 2 INTERNATIONAL MONETARY SYSTEM

NOTES

Structure

- 2.0 Introduction
- 2.1 Objectives
- 2.2 History of International Monetary System
- 2.3 Exchange Rate Regimes
- 2.4 International Monetary Fund
 - 2.4.1 Globalization and the Crisis (2005 - present)
- 2.5 European Monetary System
 - 2.5.1 Background to the Emergence of the European Monetary System
 - 2.5.2 Establishment of the European Monetary System
 - 2.5.3 Functions of the European Monetary System
 - 2.5.4 Benefits of the European Monetary Union
 - 2.5.5 Challenges Faced by the European Monetary System
- 2.6 World Bank
- 2.7 Summing Up
- 2.8 Key Terms
- 2.9 Answers to 'Check Your Progress'
- 2.10 Questions and Exercises
- 2.11 References and Suggested Readings

2.0 INTRODUCTION

International monetary systems are sets of internationally agreed rules, conventions and supporting institutions, that facilitate international trade, cross border investment and generally the reallocation of capital between nation states. International monetary system (IMS) is often used interchangeably with terms such as international monetary and financial system and international financial architecture. Since the nomenclature involves de jure/de facto jurisdiction, obligations and oversight concerning sovereign nations and multilateral bodies, it is important to be precise and specific. The objective of the IMS is to contribute to stable and high global growth, while fostering price and financial stability. The IMS comprises the set of official arrangements that regulate key dimensions of the balance of payments. It consists of four elements: exchange arrangements and exchange rates; international payments and transfers relating to current international transactions; international capital movements; and international reserves. The essential purpose of the IMS is to facilitate the exchange of goods, services and capital among countries.

The IMS is not synonymous with the international financial system. Indeed, its founding fathers may have not intended it to be so. The IMF has no powers of oversight over the IMS beyond the broad appraisal of domestic policies and conditions that may encompass the financial sector. Since 2009, however, the IMF has made the Financial Sector Assessment Programme (FSAP) (jointly owned with the World Bank) mandatory for 25 countries as part of its surveillance function.

This unit will discuss the lending and developmental role of various international financial bodies.

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2.1 OBJECTIVES

After going through this unit, you will be able to:

- Explain the evolution of international monetary system
- Describe the exchange rate regimes
- Discuss the function of International Monetary Fund
- Assess the role of Union Monetary System and benefits of European Monetary Union
- Evaluate the developmental role of World Bank globally

2.2 HISTORY OF INTERNATIONAL MONETARY SYSTEM

A successful exchange system is needed to stabilize the international payment system. An exchange system needs to fulfill three conditions:

- (a) Balance of payments (BOP) deficits or surpluses by individual countries should not be large.
- (b) These deficits should be corrected in such a way that it does not cause inflation on trade and payments for either the individual country or the whole world.
- (c) The maximum sustainable expansion of trade and other international economic activities should be facilitated.

According to Kindle Berger, 'The balance of payment of a country is a systematic record of all economic transactions between the resident of the reporting country and residents of foreign countries during a given period of time.'

The balance of payment record is maintained in a standard double-entry bookkeeping method. International transactions enter into the record as credit or debit.

- The payments received from foreign countries enter as credit and;
- The payments made to other countries as debit.

Balance of payment is a record pertaining to a period of time; usually it is an annual statement. All the transactions entering the balance of payments can be grouped under three broad accounts:

- (i) Current account
- (ii) Capital account
- (iii) Official international reserve account

Above all, the international monetary system can be defined as the institutional framework within which:

- (a) International payments are made
- (b) Movements of capital are accommodated
- (c) Exchange rates among currencies are determined.

The international monetary system has been through several distinct stages of evolution:

- | | |
|---|---------------|
| • Bimetallism | Prior to 1870 |
| • Gold Standards | 1870 to 1914 |
| • Inter-war Period | 1914 to 1944 |
| • Bretton Woods System | 1944 to 1971 |
| • Flexible/Floating Exchange Rate System
(Smithsonian Agreement) | 1971 to 1973 |
| • Managed Float System (Jamaica Agreement) | 1973 onwards |
| • Dollar, euro | 1999 — |

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1. Bimetallism (Prior to 1870): A double standard of coinage in both gold and silver that was used as international means of payment with exchange rates among currencies determined by either their gold or silver content of their coins. It was used in Britain till 1816 in U.S. till 1870. In China, India, Germany, and the Netherlands were on the silver standard.

2. Gold Standard (1870-1914): The gold standard (monetary system) is a set of policy tools and institutions through which a government provides money and controls the money supply in an economy.

It is a monetary system in which the standard economic unit of account is based on a fixed quantity of gold.

From the ancient times, gold has been used as a medium of exchange as it is durable, portable and easily tradable. Increase in the trade activity during the free trade period in the early 19th century led to the need for a more formalized system for settling business transactions. This made gold desirable to be used as a standard to determine the value of currency.

Rules of the game and price-species flow mechanism are of great significance to gold standard. Their association with gold standard can be understood as follows:

- (i) **Rules of the game:** This is a code of conduct expected to be followed by members of the same group. With the help of a collection of implied rules, members of a particular system are bound together. As per gold standards, members of a certain group were supposed to abide by the following rules:
- (a) **Gold parity:** All countries which formed a part of the gold standard were required to declare a fixed value ratio between gold and domestic currency.
 - (b) **Convertibility to gold—domestic convertibility:** As per this rule, paper money could be freely exchanged with gold at the declared gold parity, if brought to the central bank. This promise was also printed on bank notes. In the past, convertibility was understood to be convertibility of gold but in the present day context it refers to convertibility to foreign currencies.
 - (c) **Free international gold movement—international convertibility:** This rule implies that the export-import of gold as a commodity or payment method will take place without any restriction. The absence of restrictions assures free flow of finances based on prevailing demand and supply state. Government not acting as a barrier in the loss (export) of gold was considered to be significant.

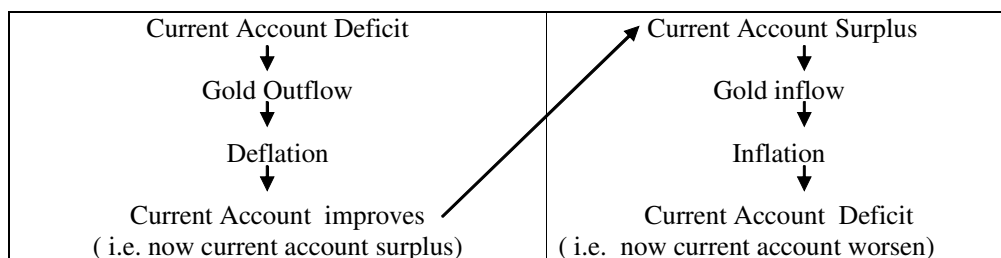
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(d) **Interest rate policy:** In case a balance-of-payments deficit occurred and a country began to lose gold, it was expected to raise short-term interest rates which would help to attract the monetary metal. However, in circumstances where a country was gaining gold, it was required to lower its short-term interest rates. This would reduce the inflow of gold. This symmetrical operation was perceived as a method through which the monetary authority could contribute in international adjustment.

(ii) **Price-species flow mechanism:** This mechanism links inflation and deflation with the flow of gold and functions in the following manner:

- (a) If due to any reason, a current account deficit exists in a country then an outflow of gold will occur. The loss of gold results in less money supply, and therefore, a price deflation will happen. In due course of time, the country's products will become less expensive in the global market. Thus, leading to a rise in exports and a decline in imports, which eventually improves the condition of the current account.
- (b) It functions the other way round for a country experiencing an initial current account surplus. In this scenario, a country will accumulate gold. This phenomenon will increase the supply of money, thereby raising the price level. The trade balance worsens as the country will lose price competitiveness.

It can be understood with Price Species Flow Mechanism



The rules of the game under the gold standard were that each country would establish the rate at which its currency could be converted to the weight of gold. Each country's government agreed to buy or sell gold at its own fixed rate of demand. This served as a mechanism to preserve the value of each individual currency in terms of gold. Each country had to maintain adequate reserves of gold in order to back its currency's value. There was a limit to the rate at which any individual country could expand its supply of money. The growth in the money was limited to the rate at which additional gold could be acquired by official authorities.

There are three types of gold standards.

1. **Gold specie standard:** The actual currency in circulation consisted of gold coins with a fixed gold content.
2. **Gold bullion standard:** It is a system in which gold coins do not circulate but the authorities agree to sell gold bullion on demand at a fixed price in exchange for circulating currency.
3. **Gold exchange standard:** The government guarantees a fixed exchange rate to the currency of another country that does use a gold standard, regardless of what type of notes or coins are used as a means of exchange. In this standard the

value of the means of exchange has a fixed external value in terms of gold that is independent of the inherent value of the means of exchange itself.

Advantages of Gold Standard

- Gold standard provided stable exchange rates, which were conducive for trade policy because this eliminates another source of price instability.
- An efficient operating gold standard exchange rate system ensures automatic adjustment of balance payment problem through price changes.
- This system imposes orthodoxy on fiscal policies and restricts governments from resorting to indiscriminate spending.

Disadvantages of Gold Standard

- The burden of BOP adjustment shifts to domestic variables which subordinate the domestic economy to external economic factors.
- There is always a problem of selecting an appropriate par value which reflects the external and internal equilibria.
- Emergence of misaligned values might have encouraged speculations of sufficient magnitude to effect exchange rate realignment. Such speculations tend to be asymmetrical, for whilst surplus countries are able, at least in the short run, to accumulate gold reserves, the deficient countries are only able to support over-valued par values and outflow of gold or as long as these flows are financed out of borrowed or existing reserves.
- The gold standard was dependent on an adequate supply and not excess supply of new gold.
- The mining process of gold involves huge cost and is used as a reserve only. The same purpose can be served by some other asset that has no cost.
- There is unequal geographic distribution of gold throughout the world. The countries which had greater gold reserves enjoyed greater strength.

3. Inter-war period (1914 to 1944): With the outbreak of the First World War, the gold standard was shattered. This devastating episode resulted from an external problem rather than an internal one. As soon as the war broke out in Europe, private trade and financial transactions were suspended. During this time, a ban was imposed on gold export. With the disappearance of an international linkage, every nation began issuing bonds and printing money to support and finance the cause of war. This resulted in every country having a different inflation rate.

4. Bretton Woods System (1944 to 1971): It was a dollar-based gold exchange standard. Names for a 1944 meeting of 44 nations at Bretton Woods, New Hampshire. The purpose was to design a postwar international monetary system. The goal was exchange rate stability without the gold standard. The result was the creation of the IMF and the World Bank. Under the BWS, the US dollar was pegged to gold at \$35 per ounce and other currencies were pegged to the U.S. dollar. Each country was responsible for maintaining its exchange rate within $\pm 1\%$ of the adopted par value by buying or selling foreign reserves as necessary.

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The Bretton Woods Agreement made the following three propositions.

1. To achieve stable exchange rates under the gold standard before World War I.
2. Performance of fluctuating exchange rates had been unsatisfactory, so it wanted to achieve a stable exchange rate system.
3. The complex nature of the government controls during 1931-1945 decreased the expansion of world trade and investment, so it wanted to decrease government interference from the same.

5. Smithsonian Agreement (1971 to 1973): In December, 1971, the Smithsonian Agreement was established. This agreement came into existence to adjust the fixed exchange rates that were authorized during the Bretton Woods Conference in 1944. Until 1973, the other currencies were connected to the Dollar. However, the main point of distinction from the previous regime was the termination of dollar's convertibility to gold guaranteed by the US Treasury. This turned the dollar into a fiat currency.

The Smithsonian Agreement was signed by the Group of Ten, who met in December, 1971 at the Smithsonian Institution situated in Washington. As per the agreement, the US pledged to peg the dollar at \$38/ounce with 2.25 per cent trading bands. Other countries also agreed to appreciate their currencies versus the dollar. During the Smithsonian Agreement, the Group of Ten also decided to balance the world's financial system through special drawing rights.

6. Managed-Float System (Jamaica Agreement) 1973 onwards: Beginning 1973, US and European countries negotiated on the reform of the international monetary system. After four years, an agreement on an amendment on the Articles was reached in Jamaica in January 1977. A system based purely on supply and demand for a currency in the foreign exchange market was initiated by European countries that lost faith in the dollar. Factors affecting demand and supply of each currency include a country's current account, the general strength of its economy, its rate of inflation and interest rates as compared against other nations. In the years since 1973, when the United States finally abandoned the fixed exchange rate system and convertibility of the dollar into gold, most world currencies have traded at floating, or flexible, exchange rates. A downside to the floating exchange rate system is that the central banks have to intervene in the markets from time to time, by buying or selling currencies to keep exchange rates from getting too high or too low.

2.3 EXCHANGE RATE REGIMES

An exchange-rate regime is the way an authority manages its currency in relation to other currencies and the foreign exchange market. It is closely related to monetary policy and the two are generally dependent on many of the same factors.

The exchange rate regimes in today's international monetary and financial system, and the system itself, are profoundly different in conception and functioning from those envisaged at the 1944 meeting of Bretton Woods establishing the IMF and the World Bank. The conceptual foundation of that system was of fixed but adjustable exchange rates to avoid the undue volatility thought to characterize floating exchange rates and to prevent competitive depreciations, while permitting enough flexibility to adjust to

Check Your Progress

1. What is understood by international monetary system?
2. What is gold standard?
3. What are the various gold standards?
4. What is the managed-float system?

fundamental disequilibrium under international supervision. Capital flows were expected to play only a limited role in financing payments imbalances and widespread use of controls would insulate the real economy from instability arising from short-term capital flows.

Temporary official financing of payments imbalances, mainly through the IMF, would smooth the adjustment process and avoid undue disturbances to current accounts, trade flows, output, and employment. In the current system, exchange rates among the major currencies fluctuate in response to market forces, with significant short-run volatility and occasional large medium-run swings. International private capital flows finance substantial current account imbalances, and fluctuations in these flows appear to be either a cause of major macroeconomic disturbances or an important channel through which they are transmitted to the international system. The industrial countries have generally abandoned control and emerging market economies have gradually moved away from them.

There are two types of exchange rate mechanisms, which are as follows:

- | | |
|---|---|
| 1. Floating exchange rate mechanisms central: | No intervention by governments or government. |
| 2. Fixed exchange rate mechanisms the exchange: | Where market dictates movement in rate. |

The fixed rate system was replaced by the floating exchange rate system. There are *five* different market mechanisms for establishing exchange rates. The choice of the method of fixing the exchange rate depends on the government of the country.

1. **Free float:** In a free market, exchange rates are determined by the interaction of currency supplies and demands. For example, in India, there are more imports from America. So there will be more demand of American dollars. If the exports are less as compared to imports, there will be a gap in demand and supply of dollars, leading to a fluctuation in the exchange rate. This system is also called a clean float.
2. **Managed float:** When the central bank of a country intervenes in the determination of exchange rates so as to smoothen the exchange rate fluctuations, it is called managed or dirty float system. The bank may smoothen out the daily fluctuations by entering the market as a buyer or seller to control the exchange rate variations.
3. **Target-zone arrangement:** Countries adjust their economic policies to control the variations in the exchange rates within a margin agreed upon. This system exists in Europe, the US, Japan and Germany.
4. **Fixed-rate system:** The governments of the countries where such a system exists maintain the exchange rate by actively buying and selling their currencies in the foreign exchange market whenever their exchange rates fluctuate from the stated par value.
5. **Current hybrid system:** The current international monetary system is a hybrid, with major currencies floating on a managed basis, some freely floating and moving from a target-zone to a fixed-rate system.

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Advantages of Fixed and Floating Rate System

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Fixed Rate System	Floating Exchange Rate System
The system provided a measure of exchange rates stability and eliminated source uncertainty and price instability	No need for intervention management of exchange rates.
Exchange rate volatility was controlled as it insulated the economy towards economic disturbances.	No need for frequent central bank intervention
Foreign investors were encouraged to invest in countries without the fear of exchange rate.	No need for elaborate capital flow restrictions
It provided an environment in which more efficient allocation of resources becomes easy.	Greater insulation from other countries economic problems
Poor nations could get foreign exchange for development purposes at low costs.	

Disadvantages of Fixed and Floating Rate System

Fixed Rate System	Floating Exchange Rate System
Require regular control and monitoring	Higher volatility
Not self-equilibrating	Use of scarce resources to predict exchange rates
Economic problem due to devaluation in rupees.	Tendency to worsen existing problems.

2.4 INTERNATIONAL MONETARY FUND

After the Second World War, monetary experts in the US and the UK started thinking about the monetary problems which might develop after the war. International Monetary Fund (IMF) is one of the two institutions formed from the agreements/results of the Bretton Woods Agreement which ended in 1944. The Bretton Woods Agreement was an offshoot of the Keynes Plan and the White Plan which led to the creation of IMF and IBRD (International Bank for Reconstruction and Development). The creation of this fund was a major effort in enhancing international monetary cooperation. In July 1944, the Articles of Agreement of IMF and the World Bank were formulated at the International Monetary and Financial Conference held at Bretton Woods, New Hampshire. The articles of agreement came into force in December 1945. The major reason for IMF's existence was the task of looking after the problems of international liquidity and exchange rate stability. The exchange rate over the years had become very volatile and it had an adverse effect on the overall financial and economic well-being of the different economies across the world.

Check Your Progress

5. What is an exchange rate regime?
6. What are the different market mechanisms for establishing exchange rate?

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Objectives: IMF has played a key role in making developing and less developed countries more comfortable in coping with their specific economic problems and providing them with funding facilities to come at par with the developed countries to match their pace of growth. Special mention needs to be made here of the funding facilities to meet the balance of payment problems. IMF offers funding facilities to different countries, but in case of a BOP crisis, members can borrow unconditionally till their share of gold or foreign currency or SDR reserves permits. If a nation borrows till this limit, it is called 'reserve tranche'. It can borrow 100 per cent of its quota in four stages. Each stage involves very strict conditions on borrowing. These conditions have been designed to ensure corrective macroeconomic policy action. If a nation borrows beyond Gold Tranche (i.e., beyond the amount of its gold or SDR deposits) then it is in the Credit Tranche. The conditions in the credit tranche are all the more strict and the member country is asked to restructure its economy to overcome the BOP crisis. The fund also makes available funds for restructuring the economy. The IMF also monitors the commitments of the government to structural reforms. Therefore, the role that IMF plays is also that of indirectly monitoring the support and assistance being provided to foreign, domestic and multinational companies to carry on their business with better government and policy procedures. Therefore, international or multinational companies which are a part of the multinational financial environment are affected positively or negatively by the IMF's decisions, policy norms and procedures.

The reserve tranche assistance is provided for three to five years and the country has to demonstrate that it is making reasonable efforts to overcome BOP problems; while in credit tranche, the economy or the country is given targets in budgetary policies, credit policies and external debt.

IMF has also extended funding arrangements under extended fund facility in which assistance is given to nations for undertaking medium-term reform measures aimed at overcoming structural problems. This facility is extended for three years. The reform measures taken by the country are monitored and repayment can be extended for 10 years.

All the facilities that have been stated and assessed earlier were regular funding facilities. Here, we assess the special facilities created to help the poor and the needy nations. The following is an explanation of the policies or facilities offered by IMF to member countries.

Enlarged access policy: Under this policy, IMF extends funds to member countries which are kept on standby and are used as extended fund facilities. The enlarged access policy can be summarized as follows:

- (a) **Compensatory and contingency financing facility:** This facility may be used when the nation is undergoing structural reforms and there is a trade deficit (value of imports is more than value of exports).
- (b) **Buffer stock financing facility:** In this facility, IMF provides help to member countries to build buffer stocks of goods (especially those goods whose demand and supply fluctuations are high), to be used in times of need.

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- (c) **Emergency assistance facility:** IMF provides this facility to member nations to get over any emergency, natural calamity (like earthquakes, volcanic eruptions) or disasters.
- (d) **Structural adjustment facility:** IMF extends this facility only to low income countries which are carrying out structural reforms.
- (e) **Enhanced structural adjustment facility:** This facility is given by IMF to those countries which have a very low income and require urgent help or urgently need to carry out structural reform schemes or processes.

Herein, parts (d) and (e) need some special assessment and analysis of the structural adjustment facility, which means that member countries availing this facility lay greater emphasis on making structural changes in their markets to make them more lucrative and attractive for MNCs which plan to enter them. IMF makes efforts to ensure that in case of such member countries, the conditions become smooth and comfortable for MNCs to do their business properly and without any basic troubles. Structural reforms relate to the growth of basic infrastructural industries like steel, road, communication, transport and other similar sectors. This means that it is much easier for MNCs to do their business in these countries which avail facilities like (d) and (e) above. Facility (e) again is an extension of (d), but on a much wider level.

We have already explained some of the funding facilities of IMF such as (a) permanent facilities for general balance of payments support (like reserve tranche and credit tranche facilities; and (b) permanent facilities for specific purposes (like extended fund facility, compensatory and contingency financing facility and buffer stock facility).

Supplemental reserve facility provides assistance to member countries which experience extraordinary balance of payments problem due to large short-term financing, vis-à-vis the sudden loss of market.

We will now discuss some temporary facilities. They are as follows:

- (i) The supplementary financing facility was introduced to provide balance of payments support, normally in excess of the quota of a member country.
- (ii) The oil facility was introduced because of the rising costs of the oil import bill of oil importing member countries. This facility was supposed to take care of excess oil imports, which member countries had to engage in to meet their oil requirements.
- (iii) The trust fund facility was introduced in the late 1970s out of the sale of IMF's gold holdings for USD 4.6 billion. Out of this fund, 104 developing countries directly received a sum of USD 1.3 billion, in proportion of their quota and the rest amounted to loans to 37 low-income countries.
- (iv) The systemic transformation facility was set up in April 1993 for the purpose of helping those countries whose balance of payments were disrupted or disturbed, due to transition from a controlled economy to a market based economy. The major beneficiaries of this facility were the East European countries.
- (v) The structural adjustment facility was introduced to provide additional BOP support in the form of loans on concessional terms to low income developing countries, or to IDA (International Development Association) countries.
- (vi) In December 1987, IMF introduced an enhanced structural adjustment facility to provide loans, in addition to the SAF loans.

Resources come from the ESAF Trust setup for the purpose of loans and contributions and special disbursements. Such loans can go up to 250 per cent of the quota, or even more in special cases. The interest rate on loans is very low (0–5 per cent) and maturity extends to 10 years.

2.4.1 Globalization and the Crisis (2005 - present)

The IMF has been on the front lines of lending to countries to help boost the global economy as it suffers from a deep crisis not seen since the Great Depression. For most of the first decade of the 21st century, international capital flows fueled a global expansion that enabled many countries to repay money they had borrowed from the IMF and other official creditors and to accumulate foreign exchange reserves.

The global economic crisis that began with the collapse of mortgage lending in the United States in 2007, and spread around the world in 2008 was preceded by large imbalances in global capital flows. Global capital flows fluctuated between 2 and 6 per cent of world GDP during 1980-95, but since then they have risen to 15 percent of GDP. In 2006, they totaled \$7.2 trillion—more than a tripling since 1995. The most rapid increase has been experienced by advanced economies, but emerging markets and developing countries have also become more financially integrated.

The founders of the Bretton Woods system had taken it for granted that private capital flows would never again resume the prominent role they had in the nineteenth and early 20th centuries, and the IMF had traditionally lent to members facing current account difficulties. The latest global crisis uncovered fragility in the advanced financial markets that soon led to the worst global downturn since the Great Depression. Suddenly, the IMF was inundated with requests for stand-by arrangements and other forms of financial and policy support.

The international community recognized that the IMF's financial resources were as important as ever and were likely to be stretched thin before the crisis was over. With broad support from creditor countries, the Fund's lending capacity was tripled to around \$750 billion. To use those funds effectively, the IMF overhauled its lending policies, including by creating a flexible credit line for countries with strong economic fundamentals and a track record of successful policy implementation. Other reforms, including ones tailored to help low-income countries, enabled the IMF to disburse very large sums quickly, based on the needs of borrowing countries and not tightly constrained by quotas, as in the past.

Changing Nature of Lending

About four out of five member countries have used IMF credit at least once. But the amount of loans outstanding and the number of borrowers have fluctuated significantly over time.

In the first two decades of the IMF's existence, more than half of its lending went to industrial countries. But since the late 1970s, these countries have been able to meet their financing needs in the capital markets.

The oil shock of the 1970s and the debt crisis of the 1980s led many lower- and lower-middle-income countries to borrow from the IMF. In the 1990s, the transition process in central and eastern Europe and the crises in emerging market economies led to a further increase in the demand for IMF resources.

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In 2004, benign economic conditions worldwide meant that many countries began to repay their loans to the IMF. As a consequence, the demand for the Fund's resources dropped off sharply. But in 2008, the IMF began making loans to countries hit by the global financial crisis. The IMF currently has programs with more than 50 countries around the world and has committed more than \$325 billion in resources to its member countries since the start of the global financial crisis.

While the financial crisis has sparked renewed demand for IMF financing, the decline in lending that preceded the financial crisis also reflected a need to adapt the IMF's lending instruments to the changing needs of member countries. In response, the IMF conducted a wide-ranging review of its lending facilities and terms on which it provides loans.

In March 2009, the Fund announced a major overhaul of its lending framework, including modernizing conditionality, introducing a new flexible credit line, enhancing the flexibility of the Fund's regular stand-by lending arrangement, doubling access limits on loans, adapting its cost structures for high-access and precautionary lending, and streamlining instruments that were seldom used. It has also speeded up lending procedures and redesigned its Exogenous Shocks Facility to make it easier to access for low-income countries. More reforms have since been undertaken, most recently in November 2011.

Main Lending Facilities

In an economic crisis, countries often need financing to help them overcome their balance of payments problems. Since its creation in June 1952, the IMF's Stand-By Arrangement (SBA) has been used time and again by member countries, it is the IMF's workhorse lending instrument for emerging market countries. Rates are non-concessional, although they are almost always lower than what countries would pay to raise financing from private markets. The SBA was upgraded in 2009 to be more flexible and responsive to member countries' needs. Borrowing limits were doubled with more funds available up front, and conditions were streamlined and simplified. The new framework also enables broader high-access borrowing on a precautionary basis.

The flexible credit line (FCL) is for countries with very strong fundamentals, policies, and track records of policy implementation. It represents a significant shift in how the IMF delivers Fund financial assistance, particularly with recent enhancements, as it has no ongoing (ex post) conditions and no caps on the size of the credit line. The FCL is a renewable credit line, which at the country's discretion could be for either one-two years, with a review of eligibility after the first year. There is the flexibility to either treat the credit line as precautionary or draw on it at any time after the FCL is approved.

The rapid financing instrument (RFI) provides rapid and low-access financial assistance to member countries facing an urgent balance of payments need, without the need for a full-fledged program. It can provide support to meet a broad range of urgent needs, including those arising from commodity price shocks, natural disasters, post-conflict situations and emergencies resulting from fragility.

The extended fund facility is used to help countries address balance of payments difficulties related partly to structural problems that may take longer to correct than macroeconomic imbalances. A program supported by an extended arrangement usually includes measures to improve the way markets and institutions function, such as tax and financial sector reforms, privatization of public enterprises.

The trade integration mechanism allows the IMF to provide loans under one of its facilities to a developing country whose balance of payments is suffering because of multilateral trade liberalization, either because its export earnings decline when it loses preferential access to certain markets or because prices for food imports go up when agricultural subsidies are eliminated.

Lending to low-income countries

To help low-income countries weather the severe impact of the global financial crisis, the IMF has revamped its concessional lending facilities to make them more flexible and meet increasing demand for financial assistance from countries in need. These changes became effective in January 2010. Once additional loan and subsidy resources are mobilized, these changes will boost available resources for low-income countries to \$17 billion through 2014. To ensure resources are available for lending to low-income countries beyond 2014, the IMF approved an additional \$2.7 billion in remaining windfall profits from gold sales as part of a strategy to make lending to low-income countries sustainable.

Three types of loans were created under the new Poverty Reduction and Growth Trust (PRGT) as part of this broader reform: the Extended Credit Facility, the Rapid Credit Facility and the Standby Credit Facility.

2.5 EUROPEAN MONETARY SYSTEM

The European Monetary System (EMS) is the second-most important international monetary-system—the first being the International Monetary System created by the IMF. The EMS is the outcome of prolonged efforts by the European Union to resolve the historical economic conflicts among European countries and to integrate their economies for common benefits. The first step was taken with the establishment of the European Coal and Steel Community (ECSC) in 1951 to adopt a common rule for trade in these products. The success of the ECSC encouraged European countries to go for political integration by signing a Treaty on the European Defence Community (EDC) in 1952. After five years, they went for economic integration under the Treaty of Rome, which led to the established of the European Economic Community (EEC) in 1957, and created a single European Common Market (ECM).

The process of economic integration continued and several other organizations and institutions were set up over time. It was in this process of economic integration of European countries that the European Monetary System was created in 1979 with the purpose of resolving their foreign exchange problems that had arisen from the collapse of the Bretton Woods system followed by the suspension of the convertibility of dollar by US President Nixon in 1971.

2.5.1 Background to the Emergence of the European Monetary System

The collapse of the Bretton Woods system and suspension of dollar convertibility in 1971 marked the collapse of the international monetary system created by the IMF. Under the Bretton Woods system, the dollar was the *international reserve currency*. It was used for the settlement of international payments, as a means of payments settlement between the central banks of different countries, and also for the control and regulation

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Check Your Progress

7. What was the main objective of the IMF?
8. What is the Stand-by Arrangement of the IMF?

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of the exchange market. The suspension of dollar convertibility caused serious economic and financial losses to European countries, economically the most important members of the international monetary system. The reason was that the dollar had depreciated after the suspension of its convertibility. Dollar depreciation caused huge losses to the central banks that had accumulated the dollar under the Bretton Woods system. At the same time, the exchange rates between European currencies fluctuated widely owing to growing speculation in the foreign exchange market, creating a disorderly and instable monetary system in, what is known as, the eurozone. The volatile fluctuations in the exchange rate affected economic growth in the eurozone adversely.

Besides, it was understood by the eurozone countries that if the European Economic Community (EEC) allowed the exchange rate to be determined freely by market forces, there could be volatile fluctuations in the exchange rates. This volatility could change the international competitiveness of their goods and services which, in turn, could affect the intended development of free trade within the community.

Furthermore, it was also feared that, under a free exchange rate system, there could be deliberate competitive currency depreciation by some member countries to gain a trading advantage. This could cause inter-country trade frictions and also trade protectionism, posing a threat to the very existence of the EEC.

Actions Taken to Resolve the Problem

To resolve the problems arising from the suspension of dollar convertibility, a committee comprising six member countries of EEC was set up in 1971 under the resolutions of the Hague Summit of 1969. It was assigned the task of investigating the problems facing the European Union and suggesting ways to resolve the problems. The committee submitted its report, called the Warner Report on Economic and Monetary Union, in 1972. It suggested the establishment of economic and monetary institutions by 1980. The main aim behind the setting up of the institutions was to regulate the monetary, fiscal, and credit policies of the EU and manage the external exchange rate. Following the recommendations of the committee, several institutions were set by the EU over a period of time. As regards the management of the external exchange rate, the EU controlled the variations of the exchange rate of European currencies within the upper and lower limits of exchange rate variations allowed by the IMF. The provision of this kind of variation is called 'the snake in the tunnel' and is discussed below.

The snake in the tunnel

The IMF permitted member countries to float (appreciate or depreciate) their currencies by ± 2.50 per cent against the US dollar, under the Smithsonian Agreement. The upper and lower range (± 2.50 per cent) of float is referred to as the tunnel. The European Economic Committee (EEC) allowed its member countries (France, Germany, Italy, Belgium, the Netherlands and Luxembourg) to float (devalue or revalue) their currencies against each other by ± 1.125 per cent, on 23 May 1972. The system became operational on 24 May 1972. This float rate is known as the 'snake in the tunnel.' The system did not work smoothly because EEC countries did not stick to it for long. It collapsed by mid-1978 as it failed to ensure the coordination of economic policies of different member countries and a stable euro exchange rate.

2.5.2 Establishment of the European Monetary System

Although the 'snake in the tunnel' system failed, the EEC continued its efforts to bring about economic cooperation among European countries to create the conditions for their economic growth and for exchange rate stability. In order to achieve these ends, six member countries of the EEC (now known as European Union) held a conference on 17 June 1978 in Bremen and took a decision to create a European monetary system. The European Monetary System (EMS) was established by the European Union in March 1979. It was created with the following objectives:

- Establishment of an integrated monetary system for the EU
- Creation of a common currency for member countries
- Stabilization of the exchange rate between the currencies of member countries
- Formulation and implementation of a common trade policy
- Establishment of a central bank for EU countries

The EMS started functioning in 1979 and began to achieve these objectives, even as it faced difficulties arising out of the conflict of interests between member countries. The EU strengthened its efforts by making modifications in the preambles of its objectives to suit member countries and establishing new institutions as functional organs.

The efforts to create an integrated monetary system and to coordinate economic policies of the European countries led to reactivation of the European Union in June 1989 by a committee headed by Jacques Delors, the president of the European Commission. The committee recommended a *three-stage* transition to the goal of monetary union.

In the *first stage*, starting in July 1990, the EMU converted the provisions for economic cooperation and other kinds of economic alliances into a common monetary and fiscal policy and removed all restrictions on the free flow of capital between member countries. The first stage was, in fact, the unification of the monetary and fiscal policies of EU countries and the creation of conditions for the free flow of capital between the nations.

In *stage two*, the EU established the European Monetary Institute (EMI). The purpose behind this EMI was to create a central power to facilitate the coordination of macroeconomic policies, especially monetary and fiscal policies, of the European central banks.

In *stage three*, the EU created a single currency, called the *euro*, and a European Central Bank (ECB). The objective of three acts was to centralize control over the money supply and monetary policy of member nations.

2.5.3 Functions of the European Monetary System

The European Monetary system had become functional in the year of its establishment. The European Monetary Union took the following steps to achieve its objectives.

- It created an exchange rate mechanism under which the exchange rate fluctuation of EEC currencies was limited to ± 2.5 per cent, although this was raised significantly over time
- It created a European Currency Unit (ECU)

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- It created a new EU currency, called the euro
- It introduced a system of a joint float of EU currencies against the dollar and other currencies, whenever necessary
- It made provision for short- and medium-term financial help to members for solving their balance-of-payments problems

These actions were modified over time by taking into account the changing economic conditions in member countries. The above-mentioned steps and the modifications thereof are described here briefly.

(i) Exchange Rate Mechanism (ERM)

The European Monetary System introduced an *exchange rate mechanism* (ERM) in 1979—a system of determining the inter-currency exchange rate and its permissible fluctuation range. It empowered the European Monetary Union to determine the bilateral exchange rate between each pair of currencies and fix the fluctuation range for the exchange rate. The band for fluctuations in the exchange rate between two currencies was initially fixed at ± 2.5 per cent. Later, with other countries (Italy, Spain, UK, and Portugal) joining the EMU, the exchange rate-fluctuation band was raised to ± 6.0 per cent. However, with the emergence of exchange-rate crisis in August 1993 and a rise in speculative tendency in the foreign exchange-market, the exchange rate fluctuation band was increased from ± 6 per cent to ± 15.0 per cent. When the fluctuation of the exchange rate of a currency exceeded 75 per cent of its allowed range, the country was required to take a number of corrective measures to bring the exchange rate within the permissible range. If the country required any help from countries using the relevant currency, this help was expected to be forthcoming.

(ii) Creation of European Currency Unit (ECU)

Under the Exchange Rate Mechanism, the EU introduced in 1979 a new currency unit, called the European Currency Unit (ECU). The numerical value of the ECU was a weighted average of the currencies of its 12 member countries. The weightage of the currency of a member country was calculated on the basis of the relative share of the country's GDP in the total GDP of the EEC and the country's share in EEC trade. The purpose of introducing the ECU was twofold.

First, the ECU it was meant to create an 'indicator of divergence'² within the *exchange rate mechanism* (ERM), i.e., a measure of the divergence of the value of a currency (depreciation or appreciation) from the exchange rate determined under the ERM. In simple words, the need for the ECU arose because of the need for keeping the fluctuation of exchange rate between currencies within the limits determined under the ERM, as per the agreement.

Second, it was meant to facilitate the settlement of international payments within the EU in terms of the ECU, not in terms of the dollar, and to use the ECU for international market-intervention, not the domestic currency.

However, there was a problem in exchange rate management. The exchange rate between the 12 currencies runs to 66 exchange rates. These exchange rates may fluctuate owing to depreciation or appreciation of the currencies with changing market conditions and trade policies in the countries. These fluctuations could cross the limits permissible under the ERM. When this happened, it called for intervention by the country.

The problem was how to measure the change in the exchange rate of one currency vis-à-vis 11 other currencies—running to 66 exchange rates—and what method to adopt to bring the diverse exchange rates within the permissible limit. It was for this purpose that a standard measure of diverse exchange rates was created in the form of the ECU—the weighted average of currencies. The exchange rate of each currency was determined in terms of the ECU. If the deviation of exchange rate of a currency crossed the ‘divergence indicator’ by 75 per cent, the country was required to intervene and bring the exchange rate close to the ERM rate.

(iii) Creation of the Euro

Although the ECU was in practice, it had certain operational problems. The main problem was that it had to be revised very often because of changing economic conditions—especially changes in GDP and relative trade share—of the EU member countries. So the weightage of each currency had to be revised. This created problems in ECU management because the frequent re-weighting of currencies created uncertainty in the market and reluctance in the use of the ECU. This gave rise to the need for changing the EU currency system. Although a decision was taken in 1994 to freeze the weight of each currency, the problem could not be resolved.

Finally, the European Monetary System was converted into the European Monetary Union (EMU) in 1998 on the recommendation of the Delors Committee, and a new currency, the *euro*, was introduced on 1 January 1999 as a common currency for 11 of the 15 EU members. The 11 countries included Germany, France, Italy, Spain, Portugal, Austria, Belgium, Finland, Ireland, the Netherlands, and Luxembourg. With Greece joining the EMU, the number of countries associated with the euro increased to 12 on 1 January 2002. While the ECU was used as a standard measure of the common value of EU currencies, the euro circulated within member countries as their own currency as a medium of exchange. The method of determining the central value of the euro was the same as that for the ECU. In brief, the central value of the euro was determined on the basis of the weighted average value of the currencies of the 12 member countries. The weight of the currency of a member country was determined on the basis of the relative share of the country’s GDP and its share in EEC trade. The weight of a currency was subject to revision every five years.

Importance of the Euro: The introduction of the euro, as a currency, was a very important and an unprecedented event of the post-World War II period. ‘This was first time that a group of sovereign nations voluntarily gave up their individual currency in favor of a common currency, and it ranks as one of the most important economic events of the postwar period.’ The introduction of the euro was taken to be an important event because it was expected to change the role of the international currency, the US dollar. It was anticipated that with the introduction of the euro, ‘the relative international use of the dollar would fall to 45 to 50 per cent (from 55 to 60 per cent) of the total, with an equal share going to the euro and the remainder going mostly to the yen and a few other smaller currencies, such as the Swiss franc, the Canadian dollar and the Australian dollar—but mostly to yen.’ Apart from gaining international importance, the euro was advantageous to the EU in many ways as given below.

- It contributed significantly to the integration of the European market.
- It helped with exchange rate stabilization as the exchange rate was fixed.

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- It contributed to the unification of inter-country interest rates.
- It helped in unifying the inflation rate.
- It accelerated the flow of trade and investment between the member countries.

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(iv) Managed joint float against the dollar and other currencies

Another important function of the EMS was unification of the float of EU currencies against the dollar and other currencies. Before the EMU came into existence, European countries were free to allow the float of their currency against dollar and any other currency. This practice led to the destabilization of the exchange rate often causing its overshooting. This was contrary to the objectives of the EMS as it affected the stability of the EU currency and led to inter-country fluctuations of exchange rates. Exchange rate fluctuations tended to reduce international trade and investment. Therefore, the EMS introduced a system of *managed joint float* of the exchange rate. Under this system, the monetary authorities of different member countries were required to go for a joint float of their respective currencies, as and when required by the EMU.

(v) Provision of short-term and long-term loans

Another important feature of the EMS was the provision of credit facility to the member countries facing BOP deficits. The basic purpose was to help them defend their exchange-rate parity and resolve their problem of transitory balance-of-payments deficits. The EMS provided for the following three kinds of credit facilities:

- Very short-term financing
- Short-term monetary support
- Medium-term financial assistance

The main objectives and conditions of these credit facilities are described here briefly.

Very short-term financing: The very short-term credit facility was operational between the participant central banks only. It was a kind of credit facility which participant central banks provided to one another for a very short period (45 days), i.e., the loan had to be repaid within 45 days. The basic purpose of this kind of credit facility was to help a member country to defend its currency. The credit facility was of unlimited amount, i.e., the central bank of one country could borrow any amount of currency from the central bank of any other member country. The loan could be repaid in terms of either creditor bank's currency or in ECUs.

Short-term monetary support: Short-term monetary support was provided to member nations to help them resolve their temporary balance-of-payments problems. Under this kind of financial support, the central bank of a member country could borrow money from the central banks of other countries under the following conditions:

Borrowing and lending was subject to a quota fixed for the central banks of member countries. The quota was fixed for both the borrowing and lending central banks.

Funds could be borrowed only for a period of three months renewable for two periods of three months on the request of the borrower.

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Medium-term financial assistance: This facility was intended for a member country facing a serious balance-of-payments problem or anticipating a threatening balance of payments deficit. Under the medium-term financial facility, it was obligatory for each country to grant credit to the country facing the problem, within the credit ceiling. There was no borrowing ceiling for the debtor country—it could borrow any amount. The medium-term loans were provided for a period of 2–5 years under the condition that the borrowing nation would take the necessary policy measures to restore equilibrium in its balance of payments.

2.5.4 Benefits of the European Monetary Union

The formation of European Monetary Union has benefitted the member countries in many ways. Some major benefits of the European Monetary System (EMS) are noted below.

Benefits of free trade: The formation of the EU removed the trade barriers between member countries. This led to the free flow of trade and thereby enhanced the economic prosperity of nations and stabilized their economies. Besides, free trade was expected to eliminate transportation costs.

More efficient allocation of the factors of production: An additional benefit of free trade and free movement of capital is more efficient allocation of the factors of production, based on the comparative theory of trade. Efficient allocation of resources is also facilitated by exchange rate stability and the removal of uncertainty.

Economy in foreign exchange reserves: The EMU created the euro. In the absence of the euro, European countries were required to hold their foreign exchange in the form of Eurodollars. Eurodollars carried a low rate of interest. Besides, the purchasing power of the Eurodollar could decline because of inflation in the US. With the introduction of the euro, foreign exchange reserves were kept in euro, and these carried a higher rate of interest and bore no cost of inflation.

Low administrative cost of business: In the absence of the euro, businessmen in European countries carried out their foreign transactions in different currencies whose exchange rates were subject to changes. This involved a risk. Managing exchange risk carried an administrative cost. A single currency, the euro, reduced the administrative cost significantly.

Greater price transparency: Another advantage of the single-currency system introduced by the EMU was the transparency of market prices. Prices of goods and services in EU countries are fixed in terms of the euro. Once prices are so fixed, it is difficult for manufacturers in different countries to make significant changes to prices in different markets. This system benefits both consumers and businessmen as it prevents competitive changes in prices.

2.5.5 Challenges Faced by the European Monetary System

The European Monetary System is generally said to have worked fairly well and has yielded some important benefits for its member countries. However, some critics point out that some of its objectives are still to be achieved. Besides, some others claim that the EMS has actually created problems for member countries.

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The objective of the EMS is to introduce a unified monetary system and monetary policy for the EU, although other economic policies remain within the domain of member countries. This divergence in the responsibilities of EMS and EU member countries has created a challenge for the EMU. Some major areas of difficulties are as described below.

- **Unification of monetary policy:** The Maastricht Treaty assigns the responsibility of creating a single monetary policy to the EMS. However, the formulation and implementation of other economic policies remain within the jurisdiction of individual countries. This kind of division of responsibilities between the EU and individual nations creates problems for governments, central banks, the monetary authorities, businessmen and labour unions, to manage the macroeconomic affairs of the economy. Resolving this problem remains a challenge for the EMU.
- **Full integration of financial markets:** Although financial markets has been greatly integrated over the three stages of the formation of the EMU, some problems still remain. Some of these are related to the lack of political integration and some to the different economic policies followed by member countries. However, this is not considered to be a big problem.
- **Coordination of macroeconomic policies:** As noted above, while conducting a unified, single monetary policy for the EU lies in the domain of the EMU, formulation and implementation of macroeconomic policies remain under the purview of the individual member countries. Under this condition, unless macroeconomic policies of the member countries are coordinated, unification of monetary policy for the EU is a difficult and time consuming affair. Although a unified market system is operational, full coordination of macroeconomic policies of different countries to assure common benefits remains a problem.
- **Reduction of unemployment:** One of the main challenges for the EMS has been to reduce unemployment which has remained persistently high in a large part of the EU. This problem can be resolved only by achieving a high growth rate of EU countries and structural economic reforms. Although EU countries did achieve sustainable high growth rates in the recent past, the global economic crisis of 2008–2010 aggravated the unemployment problem. Another related problem is that countries that are relatively economically powerful are not in a position to help other member countries.

2.6 WORLD BANK

The World Bank is an international financial institution established in the year 1944 with the aim of providing loans to developing countries for infrastructural projects. Although the official goal is poverty reduction, according to its Articles of Agreement, all its decisions should focus on and be committed to promoting international trade, foreign investment and capital investment.

There is, however, a difference between the World Bank and the World Bank Group. This difference is due to the fact that the World Bank comprises International Development Association (IDA) and the International Bank for Reconstruction and Development (IBRD), whereas the World Bank Group comprises five institutions, including the ones associated with the World Bank. The other three institutions are

Check Your Progress

9. When was the European monetary system established?
10. Mention any two functions of the European Monetary System.

International Centre for Settlement of Investment Disputes (ICSID), International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA). IBRD works with middle-income and creditworthy poorer countries to promote sustainable, equitable and job-creating growth, reduce poverty and address issues of regional and global importance.

As an agency for lending for development, the Bank mobilizes large-scale resources of private investors of the world's capital markets for investment in the developing countries. Since the credit rating of many developing countries is poor, they find it difficult to raise resources in international markets. The World Bank is, therefore, a vital source of finance for the developing countries.

The main functions of the Bank are:

- To aid in the reconstruction and the developing of territories of its member governments by facilitating investment of capital for productive purposes.
- To advertize private foreign investment by guaranteeing or by participating in loans and other investments of capital for productive purposes.
- Where private capital is not available on fair terms, to make loans for productive purposes out of its own resources or out of the funds borrowed by it.
- To promote the long-range growth of international trade and uphold equilibrium in the balance of payments of the members. International investment should be promoted for the growth of the productive resources of members.
- The bank has adopted, as a principal object, a policy of lending for productive projects which will lead to economic growth in its less developed member countries.

Lending Activities

The Bank can facilitate loans in the following ways:

- By way of participation in direct loans out of its own funds.
- By participating in direct loans out of funds raised in the market of a member, or otherwise borrowed by the bank.
- By guaranteeing in whole or part, loans made by private investors through the usual investment channel.

The Bank may give loans directly to member countries or it may guarantee loans granted to member countries. It normally makes loans for productive purposes like agriculture and surplus. The total amount of loans granted by the Bank should not exceed 100 per cent of its total subscribed capital and surplus. After calculation of the interest, an additional commission of 1 per cent for creating a special reserve against loss and 0.5 per cent for administrative expenses are charged.

Lending Policies

Over 30 per cent of the World Bank loans are policy based. Often they are referred to as structural adjustment or development lending. Loan disbursement is conditional upon a government's adoption or implementation of explicit reforms outlined in the credit documents and agreements. Trade-related reforms are frequently included amid the aims of these loans. These prerequisites may also be outlined as 'prior actions', 'tranche release conditions' or 'triggers for future adjustment credits'.

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The World Bank funds three basic types of operations—investment operations, development policy operations, and programme-for-results operations. Investment operations provide funding (in the form of IBRD loans or IDA credits and grants) to governments to cover specific expenditures related to economic and social development projects in a broad range of sectors. Development policy operations provide untied, direct budget support to governments for policy and institutional reforms aimed at achieving a set of specific development results. Programme-for-results operations support the performance of government programs by strengthening institutions and building capacity. The instrument links the disbursement of funds directly to the delivery of defined results.

- All loans are for the governments or they must be guaranteed by the governments
- Repayment period is within a period of ten to thirty-five years
- Loans are only made in circumstances in which other sources are not readily available
- Investigations are made regarding the probability of repayment, considering both the soundness of the project and the financial responsibility of the government
- Sufficient surveillance is maintained by the Bank over the carrying out of the project to assure that it is relatively well executed and managed
- Loans are sanctioned on economic and not on political considerations
- The loan is meant to finance the foreign exchange requirements of specific projects; normally the borrowing country should mobilize its domestic resources.

Project Lending

The World Bank's initial bread and butter operations comprised project loans, allowing resources for investment projects like highways, ports, health clinics, schools and oil and gas exploration. The project loans contribute to 70 per cent of World Bank's lending. The establishment has recently intensified its emphasis on projects, specifically large infrastructure and agricultural projects aimed at expanding global trade.

World Bank's Agenda

The World Bank's main mission is to facilitate the development of developing countries. This can be achieved by lending money to the developed countries at a higher rate of interest as compared to the poor countries. In fact, very minimal rate of interest or no interest loans and grants should be extended to poor country.

The five important trajectories followed by the World Bank to facilitate economic growth are:

- (i) To build capacity by strengthening and educating the governments
- (ii) Making laws towards protecting individuals and property rights and also to promote businesses
- (iii) Starting strong systems for lending and borrowing in many different situations
- (iv) Curbing corruption at the government level
- (v) Providing consultancy, research and training to facilitate academicians, students and organizations for research-related activities.

We will now discuss some of the programmes and responsibilities of the Bank.

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• Poverty reduction strategies

Under this initiative, the Bank formulates plans for poverty reduction in poor countries and simultaneously to develop themselves. Along with the local governments or groups, the Bank analyzes the specific needs of each country and accordingly develops the best strategy for it. This initiative of the World Bank receives aid from forty-five countries to the tune of \$25 million. This money goes to IDA (International Development Association), which distributes it among the poor countries according to their requirements.

• Clean technology fund management

This is a temporary management responsibility of the Clean Technology Fund which has been given to the World Bank to focus on production of cost-competitive renewable energy.

• Clean air initiative

The clean air initiative of the World Bank is focused on improving the quality of air in cities, in selected regions of the world, through various partnerships by sharing experiences and knowledge. This initiative also includes the electric vehicles.

• United Nations development business

The agreement between the World Bank and the United Nations in 1981 led to the establishment of the United Nations Development Business, which became the official source for the World Bank contract awards, procurement notices and project approvals. This agreement was renegotiated in 1998 to create an electronic version of the publication through the World Wide Web (www). Currently, all the major multilateral development banks, national governments and United Nations agencies have made the development business their primary publication for their tenders and notices. For some, it has been made a mandatory requirement to use this publication.

• Country assistance strategies

Under country assistance strategies, the World Bank identifies the key areas in which it can best support a country in reducing poverty and achieving sustainable development.

The World Bank Group

Apart from the IBRD and the IDA, there are three other such organizations that comprise the World Bank Group. They are as follows:

- (i) **International Finance Corporation (IFC)**: It promotes private sector investment by extending support to high-risk sectors and countries. The organization has been set up to help the private sector.
- (ii) **Multilateral Investment Guarantee Agency (MIGA)**: It provides guarantees related to political risk and insurance to investors and lenders in developing countries.
- (iii) **International Centre for Settlement of Investment Disputes (ICSID)**: It settles investment disputes between foreign investors and developing countries.

The World Bank has made significant efforts, over the past few years that have led to global impact. Debt relief, for one, and under heavily indebted poor countries

(HIPC), it has provided debt relief to 26 countries. The money as saved in the debt repayment of these countries is channelled into housing, education, health and welfare programmes for the poor.

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The World Bank is now committed to the cause of removal of poverty along with other numerical organizations. The Millennium Development Goals as mentioned earlier are goals related to school enrolments, child mortality, maternal health, access to water and so on. They are to be met by 2015.

The World Bank is also supporting the cause of fighting against HIV/AIDS, which, according to its agenda, is one of its priority goals. The bank has been one of the largest long-term financiers for the HIV/AIDS programmes. Currently, it is involved in programmes that amount to more than \$1.3 billion inclusive of those in Sub-Saharan Africa. The span of goals of the World Bank are as wide as extending credit to Bosnia and Herzegovina, helping Gujarat earthquake victims in India, working on AIDS awareness programmes in Guinea, supporting the cause of education for girls in Bangladesh to improving health care delivery in Mexico and helping East Timor to rebuild upon independence.

The World Bank is regarded as the largest external body that funds programmes related to education and HIV/AIDS awareness. It is also fighting against corruption. It is a leader in providing debt relief and also one of the largest bodies funding various biodiversity projects. Its main aim is to help the poor countries to emerge from their years-old conflicts and put them on the path to progress.

Following is a brief overview of the institutions associated with the World Bank:

- **International Bank for Reconstruction and Development (IBRD):** It was established in 1945 and as of 2003, it had 184 members with its cumulative lending amounting to \$383 billion (as of 2003), fiscal 2003 lending at \$11.2 billion for 99 new operations in 37 countries. The main aim of IBRD is to reduce poverty in the countries that fall in the middle-income bracket but are creditworthy at the same time. IBRD has been earning a net income each year since 1948. It is involved in various developmental activities and also ensures financial strength of poor countries. It comprises five appointed and 19 elected Executive Directors.

IBRD allows only those countries to borrow that have a per capita income of less than \$5,115 and are IDA-only borrowers. Those countries that have a higher per capita income can borrow under a special category as a part of the graduation strategy. But it must be noted that countries can be allowed to borrow from IBRD but they do not have access to IBRD funds due to their poor creditworthiness. As of 2003, it was decided that an individual member's net IBRD outstanding must not exceed \$13.5 billion irrespective of the borrower's credit worthiness. New lending by IBRD in 2003 was \$221 million. IBRD recorded robust lending to the US in accordance with the new IBRD lending programme. The leading sectors for which IBRD lent were law and justice and public administration. Other lendings covered health and social services which amounted to 18 per cent of the total. Its operating income for the year 2003 was \$300 million. The major sources of income of IBRD are interests on loans and investments, and contributions from its equity. Priority sectors for support also include the IDA and the heavily indebted poor countries (HIPC) initiative.

- **International Development Association (IDA):** It was established in 1960 comprising 164 members, with its cumulative lending amounting to \$142 billion (in 2003), fiscal lending of \$7.3 billion for 141 new operations in 55 countries.

IDA is considered to be the largest source of concessional financial assistance in the world for poor countries. It also invests in economic and human development projects.

There are two criteria on the basis of which countries are said to be eligible to access IDA funds. They are as follows:

- (i) Relative poverty of a country (as measured by per capital income).
- (ii) Lack of credit worthiness for IBRD resources.

The operational income cut-off for being eligible to use IDA funds was a per capital gross national income of \$875, as of 2003. The assistance is in the form of credit at a very high concession rate. This credit is financed by its own resources and the donor governments. The contributions as made by the donors are determined on the basis of the countries' relative strength and on the basis of their commitment to the cause of poor countries. Industrialized nations are mostly the donor countries for such funds. A chunk of the IDA resources, \$3.7 billion, were utilized for Africa, spanning over 60 operations.

- **International Finance Corporation (IFC):** It was established in 1956, comprising 175 members, lending amounting to \$23.4 billion (inclusive of \$6.6 billion in syndicated loans) and fiscal commitments at \$4.9 billion spanning over 204 projects in 64 countries. IFC mostly invests in sustainable private enterprises in developing countries. It does not accept government guarantees. It provides equity, long-term loans, advisory services and loan guarantees.
- **Multilateral Investment Guarantee Agency (MIGA):** It was established in 1988 comprising 162 members with cumulative guarantees as issued for \$12.4 million and fiscal 2003 guarantees issued for \$1.4 million. The objective of MIGA is to encourage FDI in developing countries by providing the guarantee to the investors against losses that may be caused by non-commercial risks—expropriation, restrictions on inconvertibility and transfers, war and civil disturbance and breach of contracts. It also provides technical and advisory help to countries for strengthening their intermediaries related to investment promotion, and disseminate information pertaining to investment opportunities. In addition, it also provides investment dispute mediation services on request.
- **International Centre for Settlement of Investment Disputes (ICSID):** It was established in 1966, comprising 139 members, with 129 registered cases in total, and 26 cases as registered in fiscal 2003. The basic objective of ICSID is to provide international facilities of conciliation for encouraging foreign investment, through arbitration of investment disputes.

World Bank and India

India is one of the World Bank's oldest members, and joined the institution in 1944. It has cumulatively borrowed more money than any other single country. There are currently 106 active projects in India and India's current debt to the Bank is just short of \$34 billion dollars.

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To create new jobs and to boost economic growth, the World Bank is pioneering several innovations across India's infrastructure sector. Clean energy technology is one of the areas where the World Bank-financed projects are being executed.

The World Bank Group's Strategy for India for FY 2009 to FY 2012 is closely aligned with the country's objectives as outlined in its 11th Five Year Plan. The Bank uses lending and analytical work to help India achieve its goals. Between 2009 and 2012, the Bank lent around \$19 billion to the country. As of March 2012, total net commitments stood at \$23.4 billion (IBRD \$15.6 billion, IDA \$7.8 billion) across 75 projects.

The World Bank has committed about \$5.9 billion in fourteen transport projects across railways, roads and urban transport sectors where novel ideas to strengthen corporate governance, project management, environment management, organizational efficiency, introducing cutting edge technology was being incorporated.

Thus, we see that the focus of the World Bank has shifted from merely financing the construction of physical assets to environmental impact assessment and mitigation. In the infrastructure sectors, World Bank's net commitment is to the tune of \$8.5 billion across 22 projects. Of this, six are in the energy sector with investment of \$3.6 billion.

World Bank has now fully conscious that Bank just does not need to provide resources but also has to play a development role in sharing innovative knowledge from its global experiences, providing innovative ideas, hand holding pilot projects where new methods are experimented. Some of the companies with whom World Bank has entered into partnership are PowerGrid Corporation of Maharashtra, State Electricity Transmission Company Ltd (MSETCL), West Bengal State Electricity Board (WBSEB) and Haryana Power System Improvement Project.

2.7 SUMMING UP

- International monetary system (IMS) is often used interchangeably with terms such as international monetary and financial system and international financial architecture.
- The IMS comprises the set of official arrangements that regulate key dimensions of the balance of payments.
- Gold standard is a monetary system in which the standard economic unit of account is based on a fixed quantity of gold.
- The absence of restrictions assures free flow of finances based on prevailing demand and supply state. government not acting as a barrier in the loss (export) of gold was considered to be significant.
- The rules of the game under the gold standard were that each country would establish the rate at which its currency could be converted to the weight of gold. Each country's government agreed to buy or sell gold at its own fixed rate of demand. This served as a mechanism to preserve the value of each individual currency in terms of gold.
- An exchange-rate regime is the way an authority manages its currency in relation to other currencies and the foreign exchange market. It is closely related to monetary policy and the two are generally dependent on many of the same factors.

Check Your Progress

11. What is the difference between World Bank and World bank Group?
12. What are the options of lending loans for World Bank?
13. What is the main agenda of the World Bank?

- International Monetary Fund (IMF) is one of the two institutions formed from the agreements/results of the Bretton Woods Agreement which ended in 1944.
- The articles of agreement came into force in December 1945.
- IMF has played a key role in making developing and less developed countries more comfortable in coping with their specific economic problems and providing them with funding facilities to come at par with the developed countries to match their pace of growth.
- Some of the funding facilities of IMF such as (a) permanent facilities for general balance of payments support (like reserve tranche and credit tranche facilities; and (b) permanent facilities for specific purposes (like extended fund facility, compensatory and contingency financing facility and buffer stock facility).
- Following the 2007-08 financial meltdown, the IMF was inundated with requests for stand-by arrangements and other forms of financial and policy support. The international community recognized that the IMF's financial resources were as important as ever and were likely to be stretched thin before the crisis was over.
- The flexible credit line is a renewable credit line, which at the country's discretion could be for either one-two years, with a review of eligibility after the first year.
- To help low-income countries weather the severe impact of the global financial crisis, the IMF has revamped its concessional lending facilities to make them more flexible and meet increasing demand for financial assistance from countries in need.
- Three types of loans were created under the new Poverty Reduction and Growth Trust (PRGT) as part of this broader reform: the Extended Credit Facility, the Rapid Credit Facility and the Standby Credit Facility.
- The World Bank is an international financial institution established in the year 1944 with the aim of providing loans to developing countries for infrastructural projects.
- As an agency for lending for development, the Bank mobilizes large-scale resources of private investors of the world's capital markets for investment in the developing countries.
- Apart from the IBRD and the IDA, there are three other such organizations that comprise the World Bank Group.
- Over 30 per cent of the World Bank loans are policy based. Often they are referred to as structural adjustment or development lending.
- The World Bank is also supporting the cause of fighting against HIV/AIDS, which, according to its agenda, is one of its priority goals.

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2.8 KEY TERMS

- **Gold standard:** The gold standard (monetary system) is a set of policy tools and institutions through which a government provides money and controls the money supply in an economy.
- **Flexible Credit Line:** It was designed by the IMF to meet the demand for crisis-prevention and crisis-mitigation lending for countries with very strong policy.

2.9 ANSWERS TO ‘CHECK YOUR PROGRESS’

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1. International monetary systems are sets of internationally agreed rules, conventions and supporting institutions, that facilitate international trade, cross border investment and generally the reallocation of capital between nation states.
2. Gold standard is a monetary system in which the standard economic unit of account is based on a fixed quantity of gold.
3. There are three types of gold standards.
 - (i) Gold specie standard: The actual currency in circulation consisted of gold coins with a fixed gold content.
 - (ii) Gold bullion standard: It is a system in which gold coins do not circulate but the authorities agree to sell gold bullion on demand at a fixed price in exchange for circulating currency.
 - (iii) Gold exchange standard: The government guarantees a fixed exchange rate to the currency of another country that does use a gold standard, regardless of what type of notes or coins are used as a means of exchange.
4. Managed float system is a system based purely on supply and demand for a currency in the foreign exchange market. It was initiated by European countries that lost faith in the dollar in the 1970s. Factors affecting demand and supply of each currency include a country's current account, the general strength of its economy, its rate of inflation and interest rates as compared against other nations. In the years since 1973, when the United States finally abandoned the fixed exchange rate system and convertibility of the dollar into gold, most world currencies have traded at floating, or flexible, exchange rates.
5. An exchange-rate regime is the way an authority manages its currency in relation to other currencies and the foreign exchange market. It is closely related to monetary policy and the two are generally dependent on many of the same factors.
6. There are five different market mechanisms for establishing exchange rates. These are—(i) free float (ii) managed float (iii) target-zone arrangement (iv) fixed-rate system (v) Current hybrid system
7. IMF has played a key role in making developing and less developed countries more comfortable in coping with their specific economic problems and providing them with funding facilities to come at par with the developed countries to match their pace of growth.
8. The IMF's Stand-By Arrangement (SBA) has been used time and again by member countries, it is the IMF's workhorse lending instrument for emerging market countries. The SBA was upgraded in 2009 to be more flexible and responsive to member countries' needs. Borrowing limits were doubled with more funds available up front, and conditions were streamlined and simplified.
9. The European Monetary System was established in 1979 with the aim to resolve foreign exchange problems that had arisen after the collapse of the Bretton Woods system followed by the suspension of the convertibility of the dollar by US President Nixon in 1971.

10. Two functions of the European Monetary System are:
 - (i) Create a new EU currency
 - (ii) Provide short-term and medium-term financial help to members for solving their balance-of-payment problems.
11. The term 'World Bank' refers only to the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). The term 'World Bank Group' incorporates five closely associated entities that work collaboratively toward poverty reduction: the World Bank (IBRD and IDA), and three other agencies, the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA), and the International Centre for Settlement of Investment Disputes (ICSID).
12. The Bank can facilitate loans in the following ways:
 - By way of participation in direct loans out of its own funds.
 - By participating in direct loans out of funds raised in the market of a member, or otherwise borrowed by the bank.
 - By guaranteeing in whole or part, loans made by private investors through the usual investment channel.
13. The World Bank's main agenda is to facilitate the development of developing countries. This can be achieved by lending money to the developed countries at a higher rate of interest as compared to the poor countries.

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2.10 QUESTIONS AND EXERCISES

Short-Answer Questions

1. How did the international monetary system emerge?
2. What are the advantages and disadvantages of fixed and floating rate system?
3. What are the factors that led to the foundation of the International Monetary Fund?
4. Write a note of the lending policies and facilities of the IMF.
5. Write a note on the lending policies of the World Bank.

Long-Answer Questions

1. Discuss how the international monetary system evolved through various stages.
2. What is the significance of gold standard today?
3. Why was the fixed rate system replaced by the floating exchange rate system? Discuss.
4. Do you think the role of the International Monetary Fund has expanded in the recent years? Give arguments to prove your point.
5. How has the IMF contributed to the development of low-income countries? What has been its contribution towards India?
6. Discuss the functions of the World Bank.

2.11 REFERENCES AND SUGGESTED READINGS

NOTES

- Rajwade, A. V. 1995. *Foreign Exchange, International Finance and Risk Management*, New Delhi: Academy of Business Studies.
- Apte, P. G. 2010. *International Financial Management*. Noida: Tata McGraw-Hill.
- Bhalla, V. K. & Shivaramu, S. 1996. *International Business: Environment and Management*. New Delhi: Anmol.
- Baker James C. 1998. *International Finance: Management, Market and Institutions*. New Jersey: Prentice Hall.
- Haskin Mark E. 1996. *International Financial Reporting and Analysis*, Chicago: Irwin.

UNIT 3 INTERNATIONAL FINANCIAL MARKETS

NOTES

Structure

- 3.0 Introduction
- 3.1 Unit Objectives
- 3.2 International Financial Markets
 - 3.2.1 Instruments of International Financial Markets
- 3.3 Global Financial Markets
 - 3.3.1 Foreign Exchange Market
 - 3.3.2 Structure of Foreign Exchange Market in India
- 3.4 Euro Markets
 - 3.4.1 Eurocurrency Market
 - 3.4.2 Eurobond Market
 - 3.4.3 International Equity
- 3.5 Summing Up
- 3.6 Key Terms
- 3.7 Answers to 'Check Your Progress'
- 3.8 Questions and Exercises
- 3.9 References and Suggested Readings

3.0 INTRODUCTION

Next time you drink a bottle of Coke, take a minute to think how easy it is to buy an American product nowadays. Earlier, you used to envy your friends whose relatives lived abroad and sent them goodies that were imported. Now, anyone can buy any product of foreign origin from the nearest mall or can have it delivered at one's doorstep by ordering through the Internet.

The advent of globalization and liberalization, has led to an ongoing and complex interaction between the structure, policies and activities of the open economies of the world. This makes it essential to understand the subject of international trade and more so international financial market.

In common parlance, the international financial market is synonymous with exchange rates. As you have already studied, exchange rates are the typical international financial variable, a factor in virtually every international financial market decision. For most countries, the exchange rate is the single most important price in the economy. The main aim of analysing international financial markets is first, to examine the determinants of prices in these markets and second, to understand the policy framework which influences the operators in the market.

3.1 UNIT OBJECTIVES

After going through this unit, you will be able to:

- Explain the characteristics and components of financial market
- Discuss the players in the international financial market
- Describe the Eurocurrency and Eurobond markets

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3.2 INTERNATIONAL FINANCIAL MARKETS

Brigham and Eugene defined the financial market as a place where people and organizations wanting to borrow money are brought together with those having surplus funds. Financial market does not refer to a physical location. Market participants are linked by formal trading rules and communication networks for originating and trading financial securities link market participants. Transferring of funds from the surplus sector to the deficit sector is the main function of the financial market. The credit requirements of the corporate sector are greater than their savings. The savings of the household sector are channelized into the corporate and public sectors for productive purposes.

The market participants in financial markets are investors or buyers of securities, borrowers or sellers of securities, intermediaries and regulatory bodies. Securities are financial instruments that represent the holder's claim on a stream of income or a fixed amount from a corporate or government.

3.2.1 Instruments of International Financial Markets

It is the market for instruments denominated in foreign currencies with maturity of different periods from one day to one year. This includes borrowing and lending of funds, of short term nature. It includes internationally traded instruments like treasury bills, bank certificates of deposits, commercial paper, bankers' acceptances and repurchase agreements and other short-term asset backed claims. This market is needed for MNCs operations as it provides liquidity to them. The cash surplus units keep their surplus funds in the money market. The inter-bank trading of their surpluses and deficits in cash is an important component of this market. The money market instruments are free from credit risk as there is high degree of safety.

1. Foreign Exchange Markets

The foreign exchange market is the market in which currencies of various countries are bought and sold against each other. The foreign exchange market is an over-the-counter market. It is one of the largest markets in the world. Geographically, the foreign exchange markets span all time zones from New Zealand to the West Coast of United States of America.

The retail market for foreign exchange deals with transactions involving travellers and tourists exchanging one currency for another in the form of currency notes or travellers' cheques. The wholesale market often referred to as the inter-bank market is entirely different and the participants in this market are commercial banks, corporations and central banks.

Currencies are traded against one another. On the spot market, according to the Bank for International Settlements' last triennial study (April 2004), the most heavily traded products were: EUR/USD - 28 %, USD/JPY - 17 % and GBP/USD - 14 %. The US currency was involved in 89% of transactions, followed by the euro (37%), the yen (20%) and sterling (17%). Although trading in the euro has grown considerably since the currency's creation in January 1999, the foreign exchange market is still dominated by the US dollar.

Around-the-clock market

Important foreign exchange trading centres are located in Hong Kong, Singapore, Paris and Frankfurt, amongst others, while the biggest three are New York, Tokyo and London, of which London is the largest. The foreign exchange market is open 24 hours per day throughout the week (Monday to Friday at each centre).

Market Size

The foreign exchange market is the largest in the world, with average daily international foreign exchange trading volume being \$1.9 trillion in April 2004 according to the above-mentioned BIS study:

- \$600 billion spot
- \$1,300 billion in derivatives, i.e.
- \$200 billion in outright forwards
- \$1,000 billion in forex swaps
- \$100 billion in options

2. Derivative Products

A derivative is a financial instrument whose value depends on other, more basic, underlying variables. The variables underlying could be prices of traded securities and stock, prices of gold or copper, prices of oranges to even the amount of rainfall in a particular area. Derivatives have become increasingly important in the field of finance. Options and futures are traded actively on many exchanges. Forward contracts, swaps and different types of options are regularly traded outside exchanges by financial institutions, banks and their corporate clients in what are termed as over-the-counter markets – in other words, there is no single market place or an organized exchange.

3. International Currency Markets

An important aspect of the internationalization of financial services has been the emergence of international banking consortia. Since the 1960s various banks started forming international syndicates. Multinational banks are responsible for huge international transfers of capital not only for investment purposes but also for hedging and speculating against exchange rate changes.

The main players who are involved in international finance are commercial banks, pension funds, hedge funds and private equity funds.

4. Eurocurrency Market

This represents the money market in which Eurocurrency, that is currency held in banks outside of the country where it is legal tender, is borrowed and lent by banks in Europe. The Eurocurrency market allows for more convenient borrowing, which improves the international flow of capital for trade and investment between countries and companies. For example, an Indian company borrowing U.S. dollars from a bank in Germany is using the Eurocurrency market.

London Inter-bank Bid Rate – LIBID: This is the rate bid by banks on eurocurrency deposits.

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London Inter-bank Offer Rate – LIBOR: This is the rate of interest at which banks borrow funds, in marketable size, from other banks in the London inter-bank market. This is the most widely used benchmark or reference rate for short-term interest rates.

5. European Monetary System – EMS

A 1979 arrangement between several European countries to link their currencies in an attempt to stabilize the exchange rate. This system was succeeded by the European Monetary Union (EMU), an institution of the European Union (EU), which established a common currency called the euro.

6. Money Market Instruments

The money market is the securities market dealing in short-term debt and monetary instruments. Money market instruments are forms of debt that mature in less than one year and are very liquid and relatively risk free. Treasury bills make up the bulk of the money market instruments.

Commercial Paper: This is an unsecured, short-term instrument issued by a corporation, typically for financing accounts receivables and inventories. It is usually issued at a discount reflecting prevailing market interest rates. Maturities on commercial paper are usually up to a maximum maturity 270 days.

Eurocommercial Paper: This is an unsecured, short-term paper issued by a bank or corporation in the international money market, denominated in a currency that differs from the corporation's domestic currency.

Certificate of Deposit: This is a savings certificate entitling the bearer to receive interest. A Certificate of Deposit bears a maturity date, a specified interest rate and can be issued in any denomination. CDs are generally issued by commercial banks.

Banker's Acceptance: This is a short-term credit investment created by a non-financial firm and guaranteed by a bank. Such acceptances are traded at a discount from face value on the secondary market.

7. Bond and Note Issues

A note is a debt security, usually maturing in one to 10 years. In comparison, bills mature in less than one year and bonds typically mature in more than 10 years. Often the terms 'notes' and 'bonds' are used interchangeably.

Supranational agencies like the World Bank and Asian Development Bank raise bonds in the international market. National Governments issue government bonds. Municipal or other local authorities issue municipal bonds, while companies issue corporate bonds. There are different types of bonds including fixed rate bonds, floating rate notes and convertible bonds.

- Fixed rate bonds have a coupon that remains constant throughout the life of the bond.
- Floating rate notes (FRNs) have a coupon that is linked to a money market index, such as
- LIBOR. The coupon is then reset periodically, normally every three months.

Convertible bonds can be converted, on the maturity date, into another kind of security, usually common stock in the company that issued the bonds. A convertible bond is a hybrid security, that is a security that combines elements of debt and of equity.

Foreign Currency

Convertible Bond (FCCB) is a type of convertible bond issued in a currency different than the issuer's domestic currency. Zero coupon bonds do not pay any interest. They trade at a substantial discount from par. The bond holder receives the full principal amount on the maturity date.

A Medium Term Note (MTN) is a debt note that usually matures in 5-10 years, but the term may be as short as one year. They are normally issued on a floating basis. A corporate note can be continuously offered by a company to investors through a dealer. Investors can choose from differing maturities, ranging from nine months to 30 years. This type of debt programme is used by a company so it can have constant cash flows coming in from its debt issuance. The structure allows a company to tailor its debt issuance to meet its financing needs as per requirements.

Eurobond: This is a bond issued in a currency other than the currency of the country or market in which it is issued.

Foreign Bond: This is a bond that is issued in a domestic market by a foreign entity, in the domestic market's currency. Foreign bonds are regulated by the domestic market authorities and are usually given nicknames that refer to the domestic market in which they are being offered. Types of foreign bonds include bulldog bonds, matilda bonds, and samurai bonds.

Junk Bond: This is a bond rated BB or lower because of its high default risk. It is also known as a high-yield bond, or speculative bond.

Note Issuance Facility (NIF): This consists of a syndicate of commercial banks that have agreed to purchase any short to medium-term notes that a borrower is unable to sell in the eurocurrency market. The NIF acts as an underwriter. If the borrower is unable to sell all notes, the syndicate is obliged to purchase all the remaining notes from the borrower, thus providing credit.

Revolving Underwriting Facility (RUF): This is a form of revolving credit in which a group of underwriters agrees to provide loans in the event that a borrower is unable to sell its securities in the Eurocurrency market. These loans are generally provided through the purchase of short-term Euronotes. A revolving underwriting facility differs from a note issuance facility (NIF) in that the underwriters provide loans instead of purchasing the outstanding notes that failed to sell. In either case, both RUF and NIF provide short-to medium-term credit in the Eurocurrency market.

8. Equity Financing in the International Markets

Cross border equity investment has been increasing. There is also a global trend of institutional investors from developed countries increasing their exposure to equity from emerging markets. Shares of these overseas firms are often traded in stock exchanges like New York and London. Shares of such overseas firms are traded indirectly in the form of 'depository receipts'. Under this mechanism the shares issued by the firm are held by a depository in the form of 'depository receipts'. In the case of US markets, this

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type of issue is known as ‘American Depository Receipts’ or ADRs, while ‘Global Depository Receipts’ or GDRs are used to tap multiple markets using a single instrument.

9. Balance of Payments

International trade and other international transactions result in a flow of funds between countries. All transactions relating to the flow of goods, services and funds across national boundaries are recorded in the balance of payments of the countries concerned. Balance of payments (BoPs) is systematic statement that systematically summarizes, for a specified period of time, the monetary transactions of an economy with the rest of the world.

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3.3 GLOBAL FINANCIAL MARKETS

International markets can be differentiated into domestic markets and off shore market. The domestic market is in the home currency of the country and the offshore market is a financial market in a currency other than the home currency. The Euromarket is one of the most important financial markets. This does not mean a market in which euro is traded. Euro is the common currency of the 12 countries in the European Union as the domestic currency. The most popular curries in the offshore market are dollar and euro.

International financial markets are differentiated in terms of lender/investor as:

- Banks
- Capital market
- Private Equity
- Multilateral agencies making equity and debt finance available to corporate sector.

With the higher degree of competition among the various players of the market both within and outside the country, transformation brought in the international financial market is tremendous. There are many financial instruments to be explored.

Globalization, liberalization and innovations have created a giant financial market that is complex in nature. Based on the financial operations, international financial market can be segmented into:

Exchange market: Deals with foreign exchange transactions

Credit market: Accepts deposits and lends money

Equity market: Deals with international equity issues

3.3.1 Foreign Exchange Market

Foreign exchange deals with the methods by which the wealth in one country’s currency is converted into similar rights in terms of another country’s currency. It involves the determination of the methods by which the currency of one country is exchanged for that of the other. No currency will be physically exchanged as it is not a legal tender in any country other than in the issuing country. Exchanges take place through book entries or through credit instruments by banks. The market includes all the places where a particular currency can be bought and sold for other currencies. The different markets are connected through phones and Internet and it is 24 hour market. The reasons for a foreign exchange market to exist are:

Check Your Progress

1. Define financial market.
2. What is a foreign exchange market?
3. What is derivative?
4. Define convertible bond.

- When tourists visit another country and need to change their currency into the currency of the country they are visiting.
- A domestic firm that trades with a foreign firm needs the currency of the other country.
- Any individual investor wishing to invest abroad will need a foreign currency
- Speculative trading by large banks and financial institutions.

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Participants in the Market

Any who exchanges the currency of one country for the currency of another currency will have to participate in the foreign exchange market. The main players in the foreign exchange market can be classified as:

- **Customers:** The firms engaged in foreign trade participate in the foreign exchange markets by availing services of the banks. An exporter requires the services of a bank for converting his foreign exchange receipts into home currency. An importer requires the foreign currency for making payment for the goods imported by him.
- **Commercial banks:** They have been authorized by the central banks to undertake the activity of conversion of one currency into another. They are the most active players in the Forex market. They act as an intermediary between the importers and exporters who are situated in the different countries. Commercial banks speculate in the foreign currencies which are known as trading in the Forex market.
- **Speculators:** They buy and sell currencies to make profit from the price movements.
- **Arbitraders:** They take advantage of price difference to make profits in different Forex markets.
- **Central banks:** They have the responsibility of maintaining the external value of the currency of the country. If the country is maintaining the fixed exchange rate system, then the Central Bank has to take the necessary steps for maintaining the rate.
- **Exchange brokers:** They make the parties come together and they are governed by the rules of the regulatory body of the country.

The foreign exchange (Forex) market has two segments

- Spot market
- Forward market

It trades in different currencies for both spot and forward delivery and do not have a specific location and deals takes place by means of telecommunication both within and outside the country. It consists of a network of Forex dealers which are banks, financial institutions and large companies.

(i) Spot Market

Spot market is the market where the transactions are conducted on the spot delivery of currencies. In spot exchange market, the business is transacted throughout the world on a continual basis. So, it is possible to make transactions in foreign exchange markets 24 hours a day. The standard settlement period in this market is 48 hours after the execution

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of the transaction. The spot foreign exchange is similar to over-the-counter market for securities. There is no centralized meeting place and no fixed opening or closing time. There is no physical transfer of currency, simply a book-keeping transfer entry among the banks. Exchange rates are determined by demand and supply forces in the market. The rate at which one currency is traded for another is called the exchange rate. The exchange rate for immediate delivery is called spot exchange rate and is denoted by S (.). It is a relative price. e.g., $S (\text{₹}/\$) = 47.35$. This shows the relation between Indian rupee and American dollar where one dollar is equivalent to 47.35/- on a spot.

Foreign Exchange Quotations

A quotation is the amount of a currency necessary to buy or sell a unit of another currency. When it is expressed in currency terms, it is called out right rate. If

$\$ 1 = \text{₹} 47$; it means with 47 rupees we can get one USA dollar. It is an outright rate between rupee and dollar.

The quotes are made in the form of 'buy' and 'sell' / 'ask' / 'bid' rates. The buy quote is the price at which the exchange dealer is ready to buy a currency for which the quote is made and sell quote indicates the price at which the dealer is ready to sell the currency. There are two ways of quoting exchange rates.

- **Direct method:** Number of units of domestic currency stated against one unit of foreign currency.
- **Indirect method:** Number of units of the foreign currency per unit of domestic currency.

Most countries use direct method.

Spot (bid) = ₹ 47.2500/\$; Spot (Ask) = ₹ 47.3000/\$

These quotes are direct and the exchange dealer quotes is ready to buy dollar at ₹ 47.2500 and ready to sell at ₹ 47.3000.

Spot (bid) = \$ 0.0215/₹; Spot (Ask) = \$ 0.0211 /₹

These quotes are indirect because here a unit of domestic currency is expressed in term of foreign currency.

The difference between buying and selling rates is called as spread. Generally, selling rate is higher than the buying rate. Since in this market, the players are usually banks and financial institutions, they are dealing simultaneously in buying and selling of a particular currency. They are called as market makers as they create market by quoting bid and ask prices.

When quotes are direct;

$$\text{Spread} = \text{Ask} - \text{Bid}$$

But when quotes are indirect

$$\text{Spread} = \text{Bid} - \text{Ask}$$

Example: When Direct Quotes are given

The bid price of a dollar at Spot $S (\text{₹} / \text{Bid } \$) = 48.5645$ and

The ask price is $S (\text{₹} / \text{Ask } \$) = 48.6545$, therefore the spread is

$$\text{Ask} - \text{Bid} = 48.6545 - 48.5645 = \text{₹} 0.0900$$

When the quotes are Indirect

The Bid price for dollar is $S (\$ / \text{bid DM}) = \$ 1.5900 / \text{DM}$

The ask price is $S (\$ / \text{ask DM}) = \$ 1.5800 / \text{DM}$

Spread is Bid- Ask = $1.5900 - 1.5800 = \$ 0.0100$

Cost of Transaction

Spread represents the cost of transaction. It is represented by percentage of spread.

When the quotes are direct, Cost of transaction is $(\text{Ask} - \text{Bid}) / \text{Ask} \times 100$

Example: The bid price of a dollar at Spot $S (\text{₹} / \text{Bid } \$) = 48.5645$ and

The ask price is $S (\text{₹} / \text{Ask } \$) = 48.6545$, therefore the spread is

$$\text{Ask} - \text{Bid} = 48.6545 - 48.5645 = \text{₹} 0.0900$$

$$\text{Cost of transaction} = 0.0900 / 48.6545 \times 100 = 0.1850$$

When the quotes are indirect, Cost of transaction is $(\text{Bid} - \text{Ask}) / \text{Bid} \times 100$

Example: The Bid price for dollar is $S (\$ / \text{bid DM}) = \$ 1.5900 / \text{DM}$

The ask price is $S (\$ / \text{ask DM}) = \$ 1.5800 / \text{DM}$

Spread is Bid- Ask = $1.5900 - 1.5800 = \$ 0.0100$

$$\text{Cost of transaction} = 0.0100 / 1.5900 \times 100 = 0.6289$$

How Bid and Ask rates are formed

You must be wondering how does forces of demand and supply determine the bid and the ask rate. It is pure economics, when the demand for a particular currency is high then what is available in the country, the dealer will charge higher cost to the buyer. But it is the central banks (In case of India, it is the RBI) which determines the exact calculation of rate, though also plays their part.

The mid rate 'M' is issued by the central banks of the countries if the two currencies are convertible. This rate is called the reference rate. The average cost of transaction on one side is called as 'c'. The bid and ask quotes are determined using these two variables.

$$S (\text{bid}) = M \times (1 - c) \quad \text{and}$$

$$S (\text{ask}) = M \times (1 + c)$$

$$\text{Mid-rate 'M'} = [S (\text{bid}) + S (\text{ask})] / 2$$

The closing price of the previous day $S (\text{bid})$ and $S (\text{ask})$ are taken and the new Mid-rate is taken.

$$\begin{aligned} \text{Spread} &= S (\text{ask}) - S (\text{bid}) \\ &= [M (1+c) - M (1-c)] = 2c \end{aligned}$$

Therefore, the spread is twice the one sided average cost of transaction.

Example (a): Bid and Ask direct quotes:

Suppose RBI reference rate is $S (\text{₹}/\$) = \text{₹} 35.75$ and if one way exchange margin to be charged by the authorized dealer is 0.3%, the direct bid and ask rates would be

$$\text{Bid Rate} = 35.75 - 0.3\% \text{ of } 35.75 = 35.75 - 0.11 = 35.64$$

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$$\text{Ask Rate} = 35.75 + 0.3\% \text{ of } 35.75 = 35.75 + 0.11 = 35.86$$

$$\text{Spread} = \text{Bid} - \text{Ask} = ₹ 35.86 - ₹ 35.64 = ₹ 0.22$$

Example (b): Bid and Ask prices indirect quotes:

Suppose Bundes Bank (German Central Bank) reference rate is S (\$/DM) = \$ 0.4890 and if one way exchange margin to be charged by the authorized dealer is 0.2%, the indirect bid and the ask rates per Deutsche Mark (DM) would be

$$\text{Bid Rate} = \$ 0.489 + 0.3\% \text{ of } 0.489 = 0.489 + 0.001 = \$ 0.490$$

$$\text{Ask Rate} = \$ 0.489 - 0.3\% \text{ of } 0.489 = 0.489 - 0.001 = \$ 0.488$$

$$\text{Spread} = \text{Bid} - \text{Ask} = \$ 0.490 - \$ 0.488 = \$ 0.002$$

Example (c): Cost of transaction (direct quotes): At New York Forex market the quotes for the DM are:

$$\text{Spot } (\$/\text{bid DM}) = \$0.5220 / \text{DM},$$

$$\text{Spot } (\$/\text{ask DM}) = \$ 0.5230 / \text{DM}$$

In this case the spread is

$$\text{Spread} = \text{Ask} - \text{Bid} = \$0.5230 - \$0.5220 = \$0.0010 / \text{DM}$$

Cost of Transaction is given by

$$[(\text{Ask}-\text{Bid})/\text{Ask}] \times 100 = (0.001/0.5230) \times 100 = 0.1876\%$$

Example (d): Cost of Transaction (indirect quotes)

At Paris Forex market the quotes of the \$ are:

$$\text{Spot } (\$/\text{bid FF}) = \$0.4301 / \text{FF},$$

$$\text{Spot } (\$/\text{Ask FF}) = \$0.4291 / \text{FF}. \text{ Here FF represents French Franc.}$$

The Spread in this case is

$$\text{Spread} = (\text{Bid}-\text{Ask}) = \$0.4301 - \$0.4291 = \$ 0.0010 / \text{FF}$$

Cost of Transaction is given by

$$[(\text{Bid}-\text{Ask})/\text{Bid}] \times 100 = (0.001/0.4301) \times 100 = 0.2325\%$$

It can be concluded that in case of direct quotes, the spread is in terms of domestic currency as shown in the above examples and it is in terms of foreign currency when the quotes are indirect. Thus, when the quotes are direct, the currency trader earns in terms of domestic currency and when the quotes are indirect, the trader earns in terms of foreign currency.

Example: If the buying rate for DM spot in New York is \$0.40.

- (a) What would you expect the price of the US dollar to be in Germany?
- (b) If the dollar were quoted in Germany at DM 2.60, how is the market supposed to react?

Solution: Given 1 DM = \$ 0.40 in New York

- (a) Price of US dollar in Germany should be = 0.25 DM = \$ 1
- (b) If dollar in Germany is 2.6 DM = \$ 1; then the people are expected to buy dollars in New York and sell them in Germany as the spread is 0.1 per unit of currency.

Example: On the same date that the DM spot was quoted \$ 0.40 in New York, the price of the pound sterling was quoted \$ 1.80.

- (a) What would you expect the price of the pound to be in Germany?
- (b) If the pound were quoted in Frankfurt at DM 4.40/ £, what would you do to profit from the situation?

Solution: In New York, DM 1 = \$ 0.40 and £ 1 = 1.80

- (a) This is a case of cross rate
- (b) In Frankfurt, DM 4.40 = £ 1, while in New York DM 4.5 = £ 1

Then, to profit from the situation, we should buy pounds in Frankfurt and sell them in New York.

Determinants of Spread

The main determinants of spread are:

- *The Currency being traded:* If the currency is fairly traded, the spread will be smaller than the currency that is rarely traded. For dollar the spread will be smaller than the spread for the Danish Krone. Because the dollar is fairly traded currency in Indian Market where as the Danish Krone is not.
- *The Volume of Currency being traded:* If the volume of the currency traded is large, the authorized dealer (AD) tends to quote lower spreads, this is because the cost of service required per unit of currency traded falls.
- *The Nature of organization making quotes:* The spread of quotes depends on the nature of the organization making quotations. If the bank is making a quote, the spread will be smaller as compared to the money changer or a finance company which has obtained license to deal in the foreign exchange. The basic reason for this lower spread by the banks is that banks being large organizations deal with bulk retail customers thus reducing the cost of service per unit of currency traded getting lower.
- *Over all perception of dealer about conditions of economy & the forex market:* If the Forex dealer perceives larger fluctuations in the economic conditions in the near future and thinks that the risk is going to increase, the dealer starts expanding the spread. However, otherwise the usual spread continues.

Usually these spreads are regulated by the foreign exchange dealers associations (in India by the Foreign Exchange Dealers Association of India). These associations fix the charges per unit of currency traded.

Cross Rate

The exchange rate that is obtained by the cross product of two exchange rates is called cross-rate.

$$\text{DM/US } \$ = x/y$$

$$\text{Rupee/US } \$ = a/b$$

$$\text{Rupee/DM} = a/x$$

It can be defined as a rate between third pair of currencies by using the rates of two pairs, in which one currency is common. It is a derived rate. The following equations

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can be used to find out the cross rates between two currencies 1 and 2. If the rates between 1 and 3 and 2 and 3 are given, then:

$$(1 / 2) \text{ ask} = (1 / 3) \text{ ask} \times (3 / 2) \text{ bid}$$

$$(1 / 2) \text{ bid} = (1 / 3) \text{ bid} \times (3 / 2) \text{ ask}$$

$$(1 / 3) \text{ bid} = (3 / 1) \text{ ask}$$

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Each economy has a foreign sector representing the economy's external transactions. These transactions can be economic, commercial or financial in nature. These result in receipt into and payments out of the domestic economy. Such receipts and payments involve exchange of domestic currency as against all foreign currencies of countries with which economy has dealings. If an Indian bank buys dollar, it will pay rupees for dollars and if it sells dollars, it will receive rupees for dollars. An exporter in India receives dollars from the USA; he surrenders the bill of exchange along with other documents to his bank. The bank buys the currency from exporter. An importer in India, importing from USA is in need of dollars to pay to the exporter. The importer's bank will buy from the bank and send to the party in USA. Demand for and supply of foreign currencies arises from exporters or importers of goods.

(ii) Forward Market

The market where the purchase and sales of currencies are contracted in the present for receipts and delivery in future is called the forward market. E.g. A broker can arrange a forward contract for 30 or 60 days between two currencies say dollar and rupees. Forward contracts are bought and sold at forward exchange rates.

Forward Exchange Rate

The exchange rate for delivery and payment at specified future dates are called Forward Exchange rate and is denoted by $F(.)$ that specifies a relationship between domestic and foreign currency. The forward exchange rate is contracted in the present for future delivery of foreign exchange. These are determined by forward demand and forward supply of various currencies.

A forward currency is said to be at a forward premium if its future value exceeds its present value in terms of domestic currency. E.g. If an Indian exporter is expecting his payment after two months, to reduce the risk of exchange rate volatility, he may enter into a sixty day forward contract. If the spot rate is $S (\text{₹} / \$) = \text{₹} 47.50 / \$$ and two months forward is $F_2 (\text{₹} / \$) = \text{₹} 47.75 / \$$; this implies that the dollar is at a premium and rupee is at discount in the forward market.

A forward currency is said to be at a forward discount if its future value is less than its present value. E.g. If the spot rate is $S (\text{₹} / \$) = \text{₹} 47.50 / \$$ and two months forward is $F_2 (\text{₹} / \$) = \text{₹} 47.35 / \$$; this implies that the rupee is at a premium and dollar is at discount in the forward market.

The premium / discount on foreign currency for a period is defined as:

Premium / discount = $[F(.) - S(.)] / S(.) \times 100$, Here the premium is on foreign currency and discount on domestic currency.

When the quotes are in months (N), the Annualized premium and discount are given as:

$$\text{Premium / discount} = [F(.) - S(.)] / S(.) \times (12/N) \times 100$$

When the quotes are in days (ND), premium and discount are given as:

$$\text{Premium / discount} = [F (.) - S (.)] / S (.) \times (360/ND) \times 100$$

Example: Find the **discount on rupees** (means foreign currency is at premium) for two month forward when

$$\begin{aligned} \text{Spot rate } S (\text{₹} / \$) &= ₹ 47.5000 / \$ \text{ and} \\ \text{Two month forward is } F_2 (\text{₹} / \$) &= ₹ 47.7500 / \$ \\ \text{Premium / discount} &= [F (.) - S (.)] / S (.) \times (12/N) \times 100 \\ &= (47.7500 - 47.5000) / 47.5000 \times (12/2) \times 100 \\ &= 0.0053 \times 6 \times 100 \\ &= 3.16 \% \end{aligned}$$

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Cost of Forward Contract

This can be understood with the help of an example. Let an Indian exporter has exported T-shirts worth \$ 1, 00,000 to the US and payment is expected after three months. Spot price of dollar (Bid rate) is $S (\text{₹} / \$) = ₹ 47.5000 / \$$ and 90 days forward rate $F_{90} (\text{₹} / \$) = ₹ 47.3500 / \$$. During the ninety days, the value of dollar may fluctuate and as a consequence the rupees receipts of the exporter also fluctuate because the exporter is not sure of future spot rate. Therefore, the trader sells forward the dollar receivables at a rate at which the currency was sold to protect himself against fluctuation in rupees value of dollar. Suppose in 90 days, the future spot is ₹ 46.1500 / \$. The exporter gains because of forward contract by ₹ (47.3500 – 47.1500) per dollar sold. The gains and losses of the forward contract can be calculated once the future spot rate is known.

Participants in Forward Market

The main participants are:

- **Traders:** Exporters and Importers use spot and forward markets to eliminate the risk of loss of value of export or import orders. They hedge their position in the currency markets.
- **Arbitrageurs:** They seek to earn profit by taking the advantage of differences in prices of currencies, in interest rates among countries.
- **Hedgers:** MNCs engage themselves in forward contracts to protect the home currency values of foreign currency denominated assets and liabilities. They also receivables and payables.
- **Speculators:** They take the risk by buying and selling currencies in forward market to make from fro the volatility of the exchange rates.
- **Banks:** Banks keep their position open in the foreign exchange market as have various reasons to be in the market.
- **Government:** It tries to act as a participant that tries to stabilize the volatility in the market.

3.3.2 Structure of Foreign Exchange Market in India

The foreign market in India has three segments. The first segment consists of transactions between RBI and the authorized dealer (AD). The second segment is the interbank

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market in which the banks deal among themselves. The third segment is the retail segment in which the ADs deal with the corporate clients and other retail customers. In the retail segment, money changers also operate. These are licensed dealers in the currency market to cater to the needs of retail customers. In the interbank market, the quotes appear in swap points. There are currency brokers who match the buyers and sellers and work on commission basis.

Derivative markets

Derivative markets are for those assets which are synthetic financial products derived from the real assets or stock or commodities. After floating exchange rate system replaced the fixed exchange rate system, there was high volatility in some currencies due to speculation. The regulatory bodies were forced to find new ways to reduce the risk attached to the Forex business. For managing risks on account of volatility in the exchange rates and interest rates, new products were designed and were called derivatives. They derive their value from other products. These are used for risk reduction from the high volatility of financial markets. The major problem of these derivative markets is over speculation which has to be controlled by a right degree of regulation.

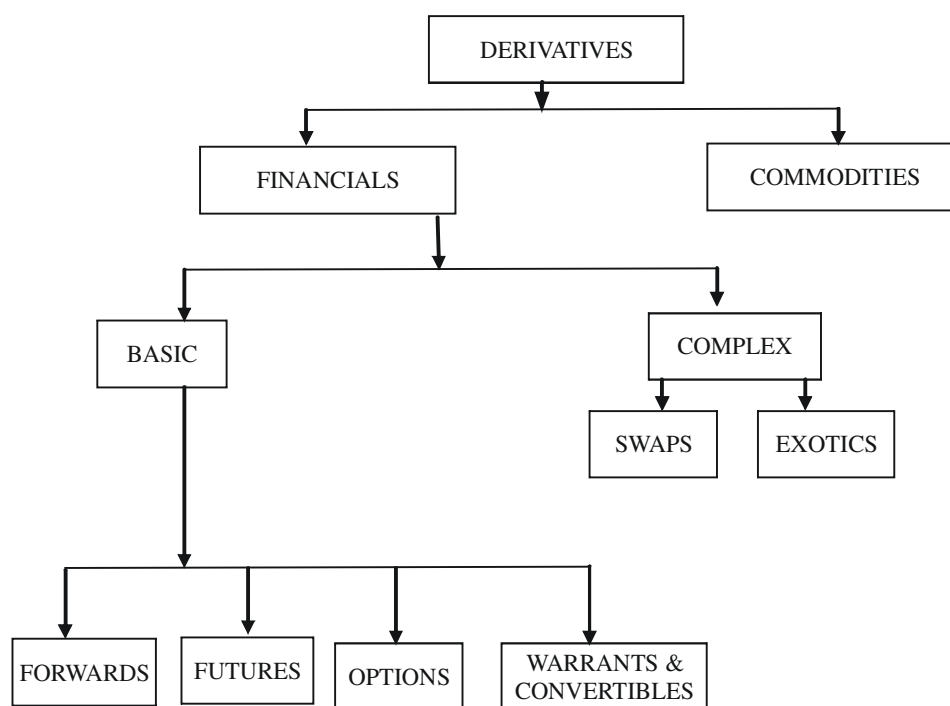


Fig. 3.1 Classification of Derivatives

Derivative market includes the following instruments:

- **Forward Rate Agreements (FRAs):** It is a contract for delivery of foreign currency at a specified future date at a fixed exchange system.
- **Swaps:** It is a deal in which a bank buys a specified foreign currency and sells the same at different maturity dates.
- **Options:** The contracts with a right to buy or sell a stated currency without any obligation, at a fixed rate on a future date.

History of Derivative Markets

The first evidence of future market can be traced to 12th century in England and France. Forward trading started in 17th century in Japan. The forward markets dealt with rice were known as Cho-at-mai meaning rice trade on book. In 1730, this market was officially recognized and thus, became the first futures market and was registered as an organized exchange. In 1898, butter and eggs dealers of Chicago Produce Exchange came together to form Chicago Mercantile Exchange for futures trading. This provided an organized market where many commodities were traded. The International Monetary Market was formed as a division of the Chicago Mercantile Exchange in 1972 which was followed by the London International Financial Futures Exchange in 1982. The derivatives are used to provide the following services:

- The main service provided by the derivatives is to control, avoid, shift and manage different types of risks through different techniques like hedging and arbitraging.
- Derivatives act as barometers of the future trends in prices that will help in establishing new prices both on the spot and futures markets.
- Derivative trading is based on margin trading and the players in the market do not have to make the full payment at the time of trade. This encourages the presence of many players in the market thus making it highly competitive market.
- Derivatives help the players of the market to develop strategies to make proper asset allocation and thus increase their yield.

Foreign Currency Futures

Foreign currency futures are the contracts specifying a volume of a particular currency to be exchanged on a specific settlement date that can be used to hedge the foreign exchange risk. In 1919, the Chicago Mercantile Exchange (CME) was established as a commodity future exchange for farmers and users of agricultural goods. In 1972, CME established the International Money Market (IMM) division that allows trading of futures of short-term securities, gold and foreign currencies.

Comparison of Forward Contracts and Currency Future Contracts

- Both Forward contracts and currency futures allow the buyer to lock in the price to be paid for a given currency at a future point in time.
- Currency futures are traded face-to-face but forward contracts are negotiated over phone.
- Currency future deals are standardized and can be traded on floor where as the contracts are customized therefore they cannot be traded on floor of the exchange.

In currency future market, different currencies are sold and purchased at a specified future date at a predetermined price and of specified quantity on a particular recognized exchange.

Features of currency futures:

- It is traded on organized exchanges.
- They are standardized.
- After a contract is agreed between two parties, the agreement is cleared by a clearing house.

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Trading Process

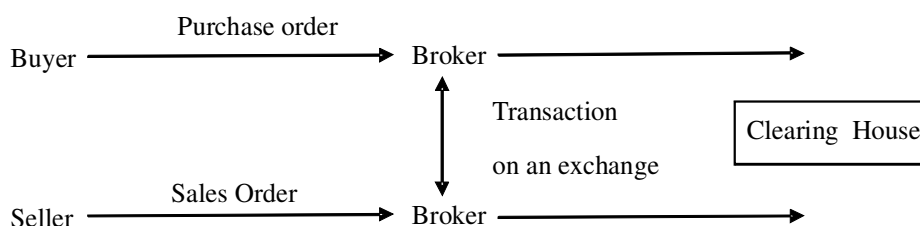


Fig. 3.2 The Trading Process

In most futures market, actual physical delivery of the underlying assets is very rare. Most often buyers and sellers offset their original position prior to delivery date by taking one opposite positions as they are speculative in nature.

3.4 EURO MARKETS

The Euromarket can be broadly divided into the Eurocurrency markets and Eurobond markets.

3.4.1 Eurocurrency Market

The eurocurrency market came into being because of the differences in the national financial regulations along with the declining barriers to international movements of capital. The eurocurrency market and its offsprings such as the eurobond, euro commercial paper and the Euro equity markets comprise some of the most important financial innovations of the last forty years. These innovations are examples of unbundling, separating the exchange risk of one currency from its indigenous regulatory environment and combining it with the regulatory climate and political risk of another financial centre (such as London). The eurocurrency market and the eurobond market virtually non-existent until the late 1950s, have grown to become major centres of activity and in many instances the preferred markets for raising or investing funds.

The eurocurrency market is the market for deposits placed under a regulatory regime different from that applied to deposits used to execute domestic transactions. In most cases, this definition corresponds to US dollar deposits outside the United States, the UK pound sterling deposits outside the United Kingdom, and so forth — simply the market for deposits denominated by a currency different from the indigenous currency of the financial centre. However, several countries have set up special regulations to permit eurocurrency deposits on domestic turf. For instance, in the United States, dollar deposits at the so-called International Banking Facilities (IBFs) have lower regulatory burden than ordinary dollar deposits in the US banks. Though IBF deposits are equivalent to euro deposits, only non-residents can avail them, and the IBF accounts may not be used for conducting transactions within the United States.

Since the eurocurrency market has expanded to financial centres outside Europe, the term offshore is more appropriate to describe its location. We use the term onshore to mean the traditional domestic marketplace. But the key distinction between offshore and onshore markets is the regulatory environment, not the location.

Check Your Progress

5. What are the types of international financial markets?
6. Name the participants in a foreign exchange market.
7. What is a spot market?
8. Define a forward market.
9. What are foreign currency futures?

Since the prefix ‘Euro’ is now also the name of a currency, the naming of offshore deposits denominated in euros requires special care.

Table 3.1 *Sectors of the International Money Market*

	US \$	UK £
Onshore	US bank deposit US Treasury bills and bonds US corporate bonds	UK bank deposit UK government bonds UK corporate bonds
Offshore	Euro-\$ deposit Euro-\$ bond (corporate and sovereign issuers)	Euro- £ deposit Euro- £ bond (corporate and sovereign issuers)

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From the above, investors (borrowers) can choose between assets (liabilities) denominated in US \$ and £. Markets for US \$ securities compete with markets for £ securities. Thus, synthetic dollar-denominated securities compete with conventional dollar-denominated securities, and synthetic pound-denominated securities compete with conventional pound-denominated securities.

However, a second dimension of competition exists in international financial markets. Securities in the onshore market bear certain regulatory costs and political risks. If these costs or risks become large, agents have an incentive to cross into the offshore markets and devise new securities and institutional structures. Thus, financial products produced in the offshore markets compete with products from the traditional onshore market base.

The offshore market portrayed is in effect a parallel market in competition with the onshore market. We expect to find competition among private agents in onshore and offshore markets. However, public policymakers have not been idle observers of this market.

Historical Overview

The eurocurrency market was not planned as a new stock exchange or a futures and options exchange might be planned today; rather, the market evolved through a combination of forces that presented an opportunity for innovation. The practice of banks accepting deposits in a currency other than the native currency of the realm was not new, at least not in Europe, where it had been a normal part of banking for hundreds of years. After World War II, Canadian, Swiss, and the UK banks commonly accepted the US dollar deposits, which they placed in the US money-market instruments through their New York correspondent banks. The innovation came in the mid-1950s when rather than simply returning their US dollars to the US money market, these banks decided lending these funds within Europe to finance foreign trade or other economic projects.

Any market can be characterized by its supply and demand components, which is a useful way to think about the origins of the eurocurrency market.

In a sense, supply of funds to the eurodollar market was always present. International commodities, such as oil, agricultural products and precious metals were often priced in terms of the US dollars. So Europeans held balances in the US dollars to execute transactions, to act as a hedge against foreign exchange changes, and to serve as a store of value. The supply of the US dollars was also enriched by Russians and other Eastern European depositors who at the time were reluctant to hold their US dollars in accounts in the United States. Most likely, these depositors remembered that

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Russian-owned dollar balances had been impounded by the Alien Property Custodian during World War II. Rather than risk confiscation, the Russians deposited their dollars in London and Paris with affiliates of state-owned Russian banks. Still another boost to the market came in 1958 with a general relaxation of exchange controls throughout Europe and a return to external convertibility for the British pound. Private individuals could now hold their US dollars earned through international trade rather than being required to sell them to the central bank.

In a sense, too, the demand for funds in the eurodollar market was always latent. Borrowers will always line up to borrow cheaper funds, because after all, there is no risk to them in doing so. But the demand for eurodollars multiplied after the sterling crisis of 1957, when the Bank of England restricted the use of sterling for financing foreign trade and external loans. British merchant banks responded with a pragmatic solution, use of US dollar, which was not regulated by the Bank of England to conduct these transactions from accounts based in London. Once the advantage of this approach was evident, European banks began to actively solicit US dollar deposits.

Onshore banking regulations bolstered the offshore markets

Banking regulations in the United States helped to serve a fresh, continuing supply of funds to the eurodollar market. Under Regulation Q, the Federal Reserve established ceilings on the interest rate that banks could pay on deposits of various sizes and maturities. No interest was allowed on demand deposits, and from January 1957 until November 1964, a ceiling of 1 per cent interest was applied to time deposits of less than ninety days. Given these restrictions, depositors were willing, if not eager, to search for higher returns offshore.

At about the same time, other US regulations helped to bolster the demand for eurodollar loans. Responding to the undesired build up of dollars overseas (dollars that the United States was obliged to convert into gold at \$35 per ounce), the United States adopted the Interest Equalization Tax (IET) in 1963. The IET amounted to an excise tax on US purchases of new or outstanding foreign securities. By raising the price of long-term borrowing, the United States encouraged foreigners to go elsewhere for borrowed funds. The eurodollar market provided one outlet, the eurobond market another.

Finding that the IET was ineffective in stopping the capital outflow, other US regulations were imposed. The so-called Foreign Credit Restraint Program (voluntary in 1965 and mandatory in 1968) set specific limits on the volume of bank lending that the US banks could conduct with foreigners. Foreign subsidiaries of the US multinational firms were included in the 'foreign' classification.

Thus, a large group of borrowers was given strong incentives not to invest in the eurocurrency markets. None of these measures were effective in achieving their stated objective of reducing the US capital outflow—perhaps because so many loopholes existed or because larger macroeconomic constraints had to apply.

European governments also experimented with capital controls during this period, which similarly helped to promote the non-dollar segments of the eurocurrency market. In the early 1970s, the Bundesbank required foreigners with onshore accounts to place a fraction of their funds in non-interest-bearing accounts. At roughly the same time, the Swiss National Bank imposed heavy interest rate penalties on non-residents with onshore Swiss franc accounts. Both Germany and Switzerland were trying to limit non-resident

demand for their currencies. Rather than face these controls and risks of future controls, agents deposited DM and Swiss francs offshore. The German capital controls expired in 1974, and the Swiss interest rate penalties were abolished in December 1979.

It should be noted that even though the initial stimulus for the eurocurrency markets is long gone, the eurocurrency markets are still with us, and larger and healthier than ever. This is noteworthy because it illustrates hysteresis effects—the idea that certain economic decisions are difficult to reverse, even when the initial conditions behind those decisions have disappeared.

Once the spirit of lower cost, less-regulated banking was out of the bottle, it was impossible to get people back to the usual ways of doing business, even though many of the rules and regulations that initially fostered the eurodollar market had been abolished.

Clendenning and Paul Einzig linked the success of the eurocurrency market with the decision to lend offshore and to create a market with both the depositors and the borrowers. Today, we describe the innovation that permits the eurocurrency market to sustain its existence as ‘unbundling’—taking the exchange risk of one currency and combining it with the regulatory climate and political risk of another financial centre. As long as the regulatory burden that exists in the offshore market is lower than it is onshore, offshore banks possibly can reduce their costs, passing on more favourable rates to both the depositors and the borrowers, and keeping a profit for themselves.

3.4.2 Eurobond Market

The eurobond market is the market for long-term debt instruments issued and traded in the offshore market. Similar to the eurocurrency market, the necessary condition for the development of a eurobond market is the difference in the national regulation. Increase in capital mobility and greater ease in telecommunications have provided sufficient conditions, allowing the eurobond market to flourish. From a base of zero in the late 1950s, the eurobond market has grown to an annual volume of new issues that often nears or surpasses the annual volume of new US corporate bond issues. Through regulatory differences as well as innovations in market processes and product offerings, the eurobond market has carved out an important niche in the international capital market, providing benefits to investors and borrowers, and occasionally profits to the parties who intermediate the transactions. Similar to the eurocurrency market, the eurobond market is in effect a parallel market, but that has not put its chief rivals, the onshore markets for domestic and foreign bonds, out of business.

To be precise, a eurobond was once defined as:

- (i) A debt instrument underwritten by an international syndicate and
- (ii) Offered for sale simultaneously in a number of countries

As a consequence of it being offered simultaneously in a number of countries, a eurobond is usually denominated in a currency (or unit of account) which is foreign to a large number of buyers. With the introduction of the bought deal, in which a single underwriter commits to an entire issue in advance, the first criterion may be lost as a distinctive element of a eurobond issue.

In contrast, a domestic bond is an obligation of a domestic issuer that is underwritten by a syndicate of domestic investment banks, denominated in domestic currency, and offered for sale in the domestic market. A foreign bond is similar to a domestic bond

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except that the issuer of the foreign bond is a foreign entity, which may be beyond the legal reach of the investors in the event of a default. For this reason, some domestic institutional investors may follow charters that restrict or prohibit purchasing of foreign bonds. The definition of a 'domestic' or 'foreign' bond that we adopt comes from the nationality of the issuer in relation to the marketplace. The term foreign may lead to some confusion in this context. A US \$ bond issued in the United States by General Motors and a ¥ bond issued in Japan by Toyota are both domestic bonds from the standpoint of the regulations that govern their initial offering and secondary market trading. From the investor perspective, Americans (Japanese) would view the Toyota (General Motors) bonds as foreign in the sense that the investment is denominated in a foreign currency and traded in a foreign marketplace. Foreign currency denominated bonds play an important role in international portfolio diversification.

Particular segments of the foreign bond market (as defined from the issue perspective) sometimes take on colourful names. For example, US \$ obligations of non-US firms that are underwritten and issued in the US market are called Yankee bonds. Japanese yen obligations of non-Japanese firms that are underwritten and issued in the Japanese market are called Samurai bonds, and British pound sterling obligations of non-UK firms that are underwritten and issued in the UK market are called Bulldog bonds. These names and others have proliferated along with the development of international financial markets.

Regulatory and institutional characteristics of the market

Some of the major regulatory and institutional characteristics of the international bond market are displayed in Table 3.2. Features of the onshore markets in the United States and elsewhere are summarized in columns 1 and 2, while the characteristics of the offshore or eurobond market are shown in column 3. Highlighting the role played by regulations. Table 3.3 begins with the regulatory body that oversees each marketplace.

Pros and cons of onshore and offshore markets

All the above points taken together leave borrowers (issuers) and lenders (investors) with various incentives for using a marketplace, as summarized in the final two rows of Table 3.3. From the issuer's perspective, the US market is large and deep, so it easily accommodates most large issues and longer-maturity issues. However, the US market places a high weight on ratings, and the information disclosure required for a US public offering may be costly to non-US issuers. The eurobond market definitely offers greater speed of placement to an issuer. Initial underwriting expenses are high, but the ongoing interest expense is often lower. Sales of a new eurobond are initially limited to offshore investors because a eurobond is not a registered security and cannot be sold to the US investors until a seasoning period has passed. This may have been a consideration for issuers in the 1970s, when the eurobond market was smaller than the US bond market.

From an investor's perspective, the size and depth of the US market also offers an attraction. Some investors may value the extent of information disclosure which the US market epitomizes. However, US securities are typically in registered form so that the ownership may be tracked. Until 1984, foreign owners of US securities were subject to a 30 per cent withholding tax on interest payments. By comparison, bonds in the eurobond market are issued in bearer form and there are no withholding taxes on interest

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payments. Retail investors who desire anonymity (either for its own sake or for tax evasion) have been attracted to the eurobond market. Institutional investors, who are audited and pay taxes, value the eurobond market as a way to earn additional returns through currency appreciation while simultaneously reducing risk through currency diversification. Institutional investors may also feel that their exposure to credit risk is reduced by access to a worldwide pool of issuers. And many institutional investors may find the absence of withholding taxes a convenience, especially if they are exempted from taxes in their home countries. In comparison to the US bond market, the eurobond market may be less liquid and offer less information disclosure about the issuers. But these features will matter less to retail investors who buy bonds to hold rather than to trade, and who put more weight on name recognition rather than accounting information and credit rating.

Table 3.2 Characteristics of Bond Issues in the International Bond Market—A Comparison

	US Market: Domestic and Foreign Bonds	Non-US Market: Domestic and Foreign Bonds	Eurobond Market
Regulatory bodies	Securities and Exchange Commission	Official agency approval	Minimum regulatory control
Disclosure requirements	More detailed *High initial expense *High ongoing expense *Onerous to non-US firms	Variable	Determined by market practice
Issuing costs	0.75–1.00%	Variable to 4.0%	2.0–2.5%
Rating requirements	Yes	Usually not	No, but commonly done
Exchange listing	Usually not listed	Listing is usual	Listing is usual
Queuing	No queue	Queuing is common	No queue
Currency of denomination restrictions	The United States does not restrict the use of US \$	Part of queuing *Many foreign countries (Germany, Switzerland) have in past or now restrict use of currency	No restrictions on use of US \$ or Can\$
Speed of issuance	Relatively slow until Rule 415 on 'shelf registration'	Variable	Usually fast ? bought deal leads to fast issuance
Borrower/Issuer incentives	(+) Large market, great depth (–) Disclosure is costly to foreigners, speed	(+) Local visibility, diversification of funding sources (–) Markets may be small, queuing may prevail	(+) Lower annual interest expense, speed of placement (–) Cannot sell issue in the US until seasoned
Lender/Investor incentives	(+) Great depth and liquidity, appeal of standardized information (–) Reporting to tax authorities, withholding tax prior to 1984	(+) Diversified currency portfolio (–) Reporting to tax authorities and withholding taxes may apply	(+) Diversified currency portfolio, bearer bonds, no withholding tax on interest payments (–) Less liquidity and information disclosures

In summary, issuers have been attracted to the eurobond market by its speed of issue and competitive pricing. Investors have been drawn to the eurobond market through the availability of bearer bonds and the lack of withholding taxes. These features have given the eurobond market an edge over onshore markets and enabled it to expand even

after the US capital controls were abolished in 1974. You will study more about Euro bonds in the next unit.

3.4.3 International Equity

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Equity markets are seen as an avenue by a large number of investors both individual and institutional as an investment source. Securities market includes the distribution of new issues of securities by new or existing companies as well as the purchase and sale of old securities in the stock exchange markets.

A company always prefers equity to debt because debt servicing is a compulsory commitment. Equity markets encourage savings among the nationals and increases the efficiency of capital allocation by channeling the savings into productive investments. An MNC has two options of approaching capital market, they are as follows:

- It can approach the Foreign Stock Exchange and get its stock listed. The instruments are Global Depositing Receipts (GDRs), American Depositing Receipts (ADRs).
- It can make domestic market attractive for portfolio investment by making in investor friendly and assuring transparency of transaction and protected environment for the investors. This can be done if there is a regulatory body that governs the trading on stock exchanges e.g. SEBI in India.

Participants of Securities Market

- **Investors and the issuers:** In every economy, the saving of individuals reaches the business sector by circulation of money in the other sectors. The individuals and institutional investors save their earnings and invest in the stock market. Issuers are the corporate world that raises money through the stock market.
- **Intermediaries:** The merchant bankers, underwriting agents and the other institutions like banks are an important link between the investors and the corporate world. They are involved since the beginning when the issue is planned and continue as the dividends are continuing affair in the securities market.
- **Regulators:** As more and more scams occurred in the different stock markets across the world, the need for a regulatory body was felt. The regulatory bodies regulate the functioning of the securities market by over viewing the process of issue till the securities are issued. They protect the interest of investors and ensure the companies that are operating in the secondary market, report all the facts and figures to the investors on timely basis.

The securities market has two segments. They are as follows:

1. **Primary market/new issue market:** In this market the corporate world approaches the investors for raising fresh capital in the form of shares. This market allows for the formation of capital in the country and the accelerated industrial and economic development.
2. **Secondary market:** This refers to various stock exchanges that provide a platform for investors to buy and sell securities from one another through brokers.

There are many points of comparison between the two markets. Table 3.3 discusses them.

Check Your Progress

10. Define eurocurrency market.
11. What is a eurobond?

Table 3.3 Comparison between Primary and Secondary Markets

Basis of difference	Primary market	Secondary market
Issues	Only new issues are dealt with	The already existing securities are traded in this market
Location	No fixed geographical location is there	There is physical location assigned to every stock exchange
Transfer of securities	Securities are created and transferred from corporate to investors for the first time.	Securities are transferred from one investor to another through the stock exchange mechanism
Entry	All companies can enter NIM and make fresh issue of securities	For the securities to enter the portals of stock exchanges for the purpose of trading, listing is mandatory.
Administration	Has no tangible form of administrative set - up	Has a definite administrative set-up that facilitates trading in securities.
Regulation	Subject to regulation mostly from outside the company – SEBI, stock exchanges, Companies act etc.	Subject to the regulation both from within and outside the stock exchange framework
Aim	Creating long – term instruments for borrowings.	Providing liquidity through marketability of those instruments
Price movement	Stock price movement in secondary market influences pricing of new issues	Both Micro and Macro factors influence the stock price movement
Depth	Depends on number and the volume of issue	Depth depends upon the activities of the primary market as it brings into the fore more corporate entities and more instruments to raise funds.

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3.5 SUMMING UP

- In common parlance, international financial market is synonymous with exchange rates. But as we have seen, exchange rates are the typical international financial variable, a factor in virtually every international financial market decision.
- Financial market does not refer to a physical location.
- The financial market is broadly categorized into money market, capital market and Forex market.
- The money market has two components namely the organized and the unorganized.
- The capital market provides long-term funds for corporates, central and state governments. The capital market has sub-markets like debt market, equity market and derivative market.
- Equity and debt instruments are issued in the primary market.
- The primary market is also known as new issue market.
- Stock exchanges are the backbone of both the equity and debt markets. The issued securities are listed in the stock exchanges.

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- The secondary market provides a trading place to buy and sell the securities already issued.
- International markets can be differentiated into domestic markets and off shore market. The domestic market is in the home currency of the country and the offshore market is a financial market in a currency other than the home currency.
- Any who exchanges the currency of one country for the currency of another currency will have to participate in the foreign exchange market.
- The spot foreign exchange is similar to over-the-counter market for securities.
- The exchange rate for immediate delivery is called spot exchange rate and is denoted by $S(.)$.
- The difference between buying and selling rates is called as spread.
- Spread represents the cost of transaction. It is represented by percentage of spread.
- The market where the purchase and sales of currencies are contracted in the present for receipts and delivery in future is called the forward market.
- A forward currency is said to be at a forward premium if its future value exceeds its present value in terms of domestic currency.
- Derivative markets are for those assets which are synthetic financial products derived from the real assets or stock or commodities.
- Derivatives act as barometers of the future trends in prices that will help in establishing new prices both on the spot and futures markets.
- The euro market is broadly categorized as eurobond and eurocurrency markets.
- The eurocurrency market came into being because of the differences in the national financial regulations along with the declining barriers to international movements of capital.
- The eurocurrency market is the market for deposits placed under a regulatory regime different from that applied to deposits used to execute domestic transactions.
- The offshore market portrayed is in effect a parallel market in competition with the onshore market.
- The eurobond market is the market for long-term debt instruments issued and traded in the offshore market. Similar to the eurocurrency market, the necessary condition for the development of a eurobond market is the difference in the national regulation.
- The definition of a 'domestic' or 'foreign' bond that we adopt comes from the nationality of the issuer in relation to the marketplace.
- The operation of Indian banks in the international currency markets has been allowed since 1969, particularly in Singapore and Hong Kong.
- The Indian banks and the Industrial Credit and Investment Corporation of India (ICICI) have been borrowing from international capital markets and forming financial bodies abroad for commercial and industrial purposes.

3.6 KEY TERMS

- **Money market:** Money market is the place where monetary assets, which are short term in nature and less than one year, are traded.
- **Forex market:** It is the foreign exchange market where foreign currency transactions take place.
- **Quotation:** A quotation is the amount of a currency necessary to buy or sell a unit of another currency.
- **Cross rate:** The exchange rate that is obtained by the cross product of two exchange rates is called cross rate.

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3.7 ANSWERS TO ‘CHECK YOUR PROGRESS’

1. Financial market is a place where people and organizations wanting to borrow money are brought together with those having surplus funds.
2. The foreign exchange market is the market in which currencies of various countries are bought and sold against each other. The foreign exchange market is an over-the-counter market. It is one of the largest markets in the world.
3. A derivative is a financial instrument whose value depends on other, more basic, underlying variables. The variables underlying could be prices of traded securities and stock, prices of gold or copper, prices of oranges to even the amount of rainfall in a particular area.
4. Convertible Bond (FCCB) is a type of bond issued in a currency different than the issuer's domestic currency Zero coupon bonds do not pay any interest.
5. Based on the financial operations, international financial market can be segmented into:
 - (i) Exchange market: Deals with foreign exchange transactions
 - (ii) Credit market: Accepts deposits and lends money
 - (iii) Equity market: Deals with international equity issues
6. The main players in the foreign exchange market are:
 - Customers
 - Commercial banks
 - Speculators
 - Arbitraders
 - Central banks
 - Exchange brokers
7. Spot market is the market where the transactions are conducted on the spot delivery of currencies.
8. The market where the purchase and sales of currencies are contracted in the present for receipts and delivery in future is called the forward market.
9. Foreign currency futures are the contracts specifying a volume of a particular currency to be exchanged on a specific settlement date that can be used to hedge the foreign exchange risk.

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10. The eurocurrency market is the market for deposits placed under a regulatory regime different from that applied to deposits used to execute domestic transactions.
11. A eurobond was once defined as a debt instrument underwritten by an international syndicate and offered for sale simultaneously in a number of countries.

3.8 QUESTIONS AND EXERCISES

Short-Answer Questions

1. What is a financial market? What are the components?
2. Write a note on spot market.
3. What are the determinants of spread?
4. What is the importance of the foreign exchange market?
5. What is the eurobond market?
6. Write a note on eurocurrency market.

Long-Answer Questions

1. Describe the functioning of a financial market.
2. What do you understand by international financial market? Explain.
3. Who are the main players of the foreign exchange market? Discuss each in detail.
4. How has the euro market emerged as the important financial market? Discuss.

3.9 REFERENCES AND SUGGESTED READINGS

- Rajwade, A. V. 1995. *Foreign Exchange, International Finance and Risk Management*, New Delhi: Academy of Business Studies.
- Apte, P. G. 2010. *International Financial Management*. Noida: Tata McGraw-Hill.
- Bhalla, V. K. & Shivaramu, S. 1996. *International Business: Environment and Management*. New Delhi: Anmol.
- Baker James C. 1998. *International Finance: Management, Market and Institutions*. New Jersey: Prentice Hall.
- Haskin Mark E. 1996. *International Financial Reporting and Analysis*, Chicago: Irwin.

UNIT 4 FOREIGN EXCHANGE MARKET

NOTES

Structure

- 4.0 Introduction
- 4.1 Objectives
- 4.2 Introduction to Foreign Exchange Markets
 - 4.2.1 Fixed and Floating Rates
 - 4.2.2 Functions of Foreign Exchange Market
 - 4.2.3 Participants in the Market
 - 4.2.4 Structure of Foreign Exchange Market
 - 4.2.5 Types of Foreign Exchange Transactions
 - 4.2.6 Spot and Forward Transactions
- 4.3 Mechanism of Currency Dealing
- 4.4 Significance of Foreign Exchange Rate
 - 4.4.1 Rate of Exchange; 4.4.2 Exchange Rate Determinants
- 4.5 Exchange Rate Quotations
 - 4.5.1 Spread; 4.5.2 RBI's Reference Rate
 - 4.5.3 Interpreting Foreign Exchange Quotation
- 4.6 Arbitrage
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- 4.9 India and Foreign Currency Markets
- 4.10 Summing Up
- 4.11 Key Terms
- 4.12 Answers to 'Check Your Progress'
- 4.13 Questions and Exercises
- 4.14 References and Suggested Readings

4.0 INTRODUCTION

The foreign exchange market or currency market is a global decentralized market for trading of currencies. The function of sales and purchase of foreign exchange in India is performed by authorized dealers/money changers, i.e., the banks and financial institutions appointed by the Reserve Bank of India (RBI) and established under the Foreign Exchange Management Act (FEMA), 1999. The foreign exchange market determines the relative values of different currencies. The foreign exchange market assists international trade and investment by enabling currency conversion. For example, it permits a business in the United States to import goods from the European Union member states, especially Eurozone members, and pay euros, even though its income is in United States dollar. It also supports direct speculation in the value of currencies, and the carry trade, speculation based on the interest rate differential between two currencies.

This unit will give a detailed outline of currency dealing in the international market, i.e., foreign exchange markets, the participants and the instruments used. You will learn about exchange rate quotations and how they can be interpreted, what is understood by arbitrage and forward rates and foreign exchange market in India.

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4.1 OBJECTIVES

After going through this unit, you will be able to:

- Discuss the evolution of the foreign exchange market and its structure
- Describe the participants in the foreign exchange market and the transactions taking place
- Explain the mechanism of currency dealings
- Analyse rate of exchange and the factors that determine their rate
- Interpret exchange rate quotations
- Discuss arbitrage and forward rates
- Describe the structure of foreign exchange market in India

4.2 INTRODUCTION TO FOREIGN EXCHANGE MARKETS

The 17th century saw the start of the depositing of coins and bullion with money changers and goldsmiths. The first people to start the system of money by book entry were the goldsmiths in England. This development further led to the expansion of banking services and the people started gaining the confidence that they can receive certain commodities against the bank note they possessed. Thus, the history of foreign exchange can be traced back to the time when the moneychangers in the Middle East would exchange money from all over the world. In 1880, the practice of using gold as the standard of value started whose main aim was to guarantee any currency against a set amount of gold.

Under the gold standard exchange rates, currency was backed by gold and was measured in ounces. For this, the countries needed huge reserves of gold in order to back the demand for currency. The foreign exchange rate was determined by the difference of the price of gold between these two countries. The foreign exchange history changed due to the birth of an international standard through which foreign exchange could take place conveniently between different countries. During the First World War, financial issues arose in Europe which gave way to a lack of gold and this led to a historical change in foreign exchange.

There emerged a void due to the abolishment of the gold standard and to discuss this concern, a convention was held in July 1944 at Bretton Woods, New Hampshire. The new Bretton Woods monetary system led to a changed forex market which put forward the following solutions:

- A new method was to be established in order to obtain a fixed foreign exchange rate.
- The US dollar is to replace the gold standard as the new final exchange currency.
- The US dollar will be the only currency which will be backed by gold.
- Three international authorities will be founded who would guard over all the foreign transactions.

However, the Bretton Woods monetary system also failed after a period of 25 years and on 15 August 1971, the US announced the end of the exchange of gold for US dollar.

4.2.1 Fixed and Floating Rates

The currency system in which the regulator tries to keep exchange rate constant between domestic currency and foreign currencies is known as the fixed exchange rate system. In this system, the government of a country determines the value of its currency against a fixed amount of another currency.

The gold standard is the oldest fixed exchange rate regime. The gold standard functioned till the beginning of the World War I and even few years after that. According to the gold standard, the currency in circulation is convertible into gold at a fixed rate. Therefore, the exchange rate between any two currencies is determined by the value of the currencies in terms of gold.

After the fall of the gold standard, the world monetary system was in chaos and the volume of international trade fell considerably. Thus, in place of the gold standard, the gold exchange standard, popularly known as the Bretton Woods System, was put up after the World War II by the victorious allies of the war.

Advantages of Fixed Rates System

1. The system provides exchange rates stability by eliminating uncertainty.
2. Volatility of exchange rate is controlled as it insulates the economy from external disturbances.
3. Foreign investors are encouraged to invest in countries without the fear of exchange rate fluctuations.
4. Poorer nations could get foreign exchange for development purposes at low costs.

Disadvantages of Fixed Rates System

1. The system required regular rigorous control and monitoring by the monetary authorities.
2. The system is not self equilibrating therefore over-valuation and under-valuation existed.
3. Since the realignment was to be done only when all other avenues to correct the balance of payment were exhausted, therefore the burden accumulated and the economies which resorted to devaluation faced a lot of economic problems.
4. The system required regular rigorous control and monitoring by the monetary authorities.

Floating Exchange Rate System

Floating exchange rates can be broadly classified into two types: clean float and dirty float. In the clean float exchange rate system, the exchange rate is determined by the forces of demand and supply without any intervention from the central authorities. But when the central banks intervene to either raise or lower the exchange rate in the floating exchange rate system, it is referred to as dirty float or managed float.

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In the dirty float, there are two main reasons why the central banks and other authorities intervene in the exchange rate system. The reasons are as follows:

- To stabilize fluctuations in the exchange rate
- To reverse the growth of trade deficit

In the pure float, the system is close to a free float, whereas in the dirty float system, it is close to an adjustable peg. There are various other substitutes between the two extremes of fixed and floating exchange rate regimes and these substitutes try to incorporate the good features of both the regimes. The alternate exchange rate systems are as follows:

- The crawling peg system allows for modifications within the narrow band of +1 or –1 per cent, and thus, replaces the abrupt parity changes of the adjustable peg system. In simple words, the crawling peg is the system in which a currency exchange rate is changed frequently, may be many times a year, mainly to make adjustments for rapid inflation.
- The wider bands system is more flexible as it has wider bands of variation around the central parity. The parity can either be shifted as in the case of the crawling peg and then the wider bands are referred to as gliding bands or there may be discrete jumps as in the adjustable peg.
- The multiple exchange rate system allows for applying different exchange rates to different transactions. For example, in 1992, India had two exchange rates—the ‘official’ exchange rate applicable to certain imports and a ‘market determined’ exchange rate for other transactions.

4.2.2 Functions of Foreign Exchange Market

The foreign exchange market performs various functions, which are as follows:

- (i) Transfer function: To facilitate transfer of power of purchasing between countries:** The primary function of the foreign exchange market is to help the transformation of a currency into other currency, which means to accomplish the to and fro movement of power of purchasing between two countries. This to and fro movement of the power of purchasing is affected by a range of credit instruments, e.g., bank drafts and foreign bills.
- (ii) Credit function: To provide credit for foreign trade:** Foreign exchange market also functions to provide national credit and international credit to promote foreign trade. Obviously, when payments of international level use foreign bills of exchange, a credit for about 3 months is required, till it matures.
- (iii) Hedging function: To furnish facilities for hedging the risks of foreign exchange:** In a free-exchange market when exchange rates change, that is, when there is a change in the price of one currency in terms of another, the party concerned may either suffer a loss or a gain. In such circumstances, a company or a person may take a high exchange risks in case of high values of net claims or net liabilities, which are to be met in foreign money. It is best to either avoid or reduce the exchange risks. To enable this, facilities for expected hedging or actual claims or liabilities are provided by foreign exchange markets through forward contracts.

For this exchange market provides facilities for hedging anticipated or actual claims or liabilities through forward contract in exchange.

Foreign Currency and Foreign Exchange

Foreign currency: Any currency other than the Indian rupee is a foreign currency, or in simple terms, the currency of another country.

Foreign exchange: It includes foreign currency, drafts, bills, letters of credit and travelers cheques that are denominated and payable eventually in foreign currency. The places where currencies of different countries are bought and sold against each other are called foreign exchange market.

4.2.3 Participants in the Market

Anyone who exchanges the currency of one country for the currency of another currency will have to participate in the foreign exchange market. The main players in the foreign exchange market can be classified as follows.

- **Customers:** The firms engaged in foreign trade participate in foreign exchange markets by availing the services of banks. An exporter requires the services of a bank for converting his foreign exchange receipts into home currency. An importer requires foreign currency for making payment for the goods imported by him.
- **Commercial banks:** They have been authorized by the central banks to undertake the activity of conversion of one currency into another. They are the most active players in the forex market. They act as an intermediary between the importers and exporters who are situated in different countries. Commercial banks speculate in foreign currencies, and this is known as trading in the forex market.
- **Speculators:** They buy and sell currencies to make profit from price movements.
- **Arbitrageurs:** They take advantage of price difference to make profits in different forex markets.
- **Central banks:** They have the responsibility of maintaining the external value of the currency of a country. If a country is maintaining the fixed exchange rate system, then its central bank has to take necessary steps for maintaining the rate.
- **Exchange brokers:** They make the parties come together and are governed by the rules of the regulatory body of the country.

4.2.4 Structure of Foreign Exchange Market

A foreign exchange market is a decentralized market, which distinguishes it from other such as stock exchange. It is an unregulated global market which does not have a physical address but trading takes place like the Bombay Stock Exchange or the New York Stock Exchange (NYSE).

A forex market has three tiers. On the top are the largest banks in the world that account for most of the daily traded volumes, estimated at almost \$4 trillion by the Bank of International Settlements (BIS). The retail traders cannot access these banks, who form the interbank market and set market trends. These banks trade huge volumes either in their own name or that of their customers, due to which the spreads are tight. The banks trade in credit, which is possible due to their relationship, i.e. to say, a bank will be able to access another bank's offered rate only if the two have a specific credit

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relationship. These banks trade through the Electronic Brokering Services (EBS) or the Reuters Dealing. The main difference between the two is some pairs are more liquid on one platform than on the other.

The governments and the central banks of countries play an important role in the forex market. These two entities are influential players and participate in the market for their international trade payments or to adjust their reserve volumes. The central banks have a more indirect participation, by affecting money supply.

Commercial firms, institutional investors and hedgers form the mid level participants. When companies buy assets abroad or go for mergers and acquisitions they require money. They place such orders through banks and, although these trades don't affect directly and immediately the forex market, during time their impact is seen. Investment management firms buy currencies needed in foreign securities transactions or in a pure speculative operation.

Retail forex brokers are another set of significant players in the market. They are the ones through which the retail foreign exchange actually takes place. They form the link between the small speculators, the retail traders, and the interbank market. Prior to their evolution, only the big speculators and the investment funds could access the interbank markets. Retail forex brokers are of two types— electronic communication networks (ECN's) and market makers. They can be differentiated by the way they offer prices are formed.

The last layer of the forex market is formed by the small speculators who access the market through retail forex brokers. This group forms just 10 per cent of the spot forex turnover.

4.2.5 Types of Foreign Exchange Transactions

As we have said earlier, the foreign exchange market can be defined as the market where foreign currencies are bought and sold. In case an Indian importer needs to import goods from the USA, he has to pay in US dollars, He will take the help of the foreign exchange market in order to buy dollars for rupees. The exporter, on the other hand, converts the export proceeds that have been obtained in a foreign currency to his own currency. Apart from these transactions, there are many types of transactions that are involved in the import and export of goods.

Since there are different kinds of dealers, there are different kinds of foreign exchange transactions as follows:

- Hedging
- Arbitrage
- Speculation
- Currency swaps

We will now briefly discuss the nature of deals in these kinds of foreign exchange transactions.

1. Hedging

An important feature of the forward exchange market is *hedging*. Hedging is a method of covering risk arising from a change in the exchange rate. In fact, hedging means

settling the exchange rate by agreement 90 days in advance for forward transactions with a view to avoiding the loss due to exchange rate fluctuations. The contract between exporters and importers to sell and buy goods at some future date takes place at current prices and the current exchange rate. There is always a time lag between the deal and the final delivery of goods. Under a flexible exchange-rate system, it is quite likely that the exchange rate fluctuates and this may reduce profits or altogether wipe them out. The country whose currency depreciates due to exchange rate fluctuations suffers losses. Such losses can be avoided if there is a forward exchange market. The existence of such a market enables exporters to hedge against risks arising from currency depreciation. Through hedging, the exporter is assured of the value of his exports at the current exchange rate. Similarly, an importer who enters an agreement to import in future because of anticipated exchange rate fluctuation, buys in advance the foreign exchange for payment abroad.

The banks dealing in forward purchase and sale of foreign exchange play a very important role in the forward foreign exchange market in so far as they help exporters and importers secure their interest against the risks involved in exchange rate fluctuations and thus enable them to concentrate on their purely trading operations.

Hedging has certain important advantages:

- It protects against uncertainty in international transactions.
- It ensures the free and regular flow of goods and services between trading partners.
- It prevents loss due to depreciation of the currency of the exporting country. For example, suppose the dollar to rupee exchange rate is given as $\$1 = ₹50$. This means that an Indian exporter will have to export goods worth 50 rupees to earn one dollar. If the rupee depreciates and the exchange rate changes to $\$1 = ₹55$, India will have to export goods worth 55 rupees to make one dollar.

2. Arbitrage

Arbitrage is an act of simultaneous purchase and sale of different currencies in two or more exchange markets. The objective is to make profits by taking advantage of exchange-rate differentials in the different markets.

The significance of arbitrage lies in the fact that it equalizes the foreign exchange rates in all major foreign exchange markets. Arbitrage operations play a leading role in the transferring of foreign exchange from the markets where the exchange rate is low to the markets where it rate is high. Thus, arbitrage equalizes the demand for foreign exchange with its supply. It works as a stabilizing factor in foreign exchange markets.

Arbitrage is, however, possible only when the foreign exchange market is free from controls or when controls, if any, are of limited significance. When the purchase and sale of foreign exchange is subject to severe and effective controls, arbitrage becomes impossible.

3. Speculation

Speculation is the opposite of hedging. In hedging, buyers and sellers try to avoid risk, if any, due to fluctuations in the exchange rate. Speculative dealers assume risk with a view to making a profit from the fluctuations. Similarly, speculation is different from arbitrage. In arbitrage, foreign exchange dealers take advantage of two different

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exchange rates between any two currencies and indulge in the simultaneous buying and selling of currencies. *Speculation* in foreign exchange is a deliberate assumption of risk to make profits from fluctuations in the exchange rate.

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The speculative sale and purchase of foreign currency is based, as in all other speculative business, on the speculators' expectations about the future exchange rates. There are some speculators who expect the exchange rate to decline in the foreseeable future. These speculators with pessimistic expectations are called *bears*. On the other hand, there are other speculators who expect the exchange rate to increase. They are called *bulls*. Since bears expect the foreign exchange rate to decline, they sell their currency holding to avoid loss. The bulls, on the other hand, expect the exchange rate to rise, so they buy foreign currency with a view to selling it when the exchange rate increases in future. Whether bulls and bears gain or lose depends on how correct they are in their expectations about the exchange rate.

Speculative transactions have both a stabilizing and destabilizing impact on the exchange rate. If speculators buy a currency when it is cheap and sell when it is dear, it has a stabilizing effect on the exchange rate. However, some economists argue that speculative transactions have a destabilizing effect. Therefore one of the controversial definitions of destabilizing speculation is 'sell-ing when a currency is weak in the expectation that it will be weaker, or buying it when it rises in price, believing that it will rise still more.' Friedman has, however, argued that 'if the exchange rate were highly overvalued or undervalued, speculation which drove it towards equilibrium might properly be regarded as stabilizing if it reinforced market movements.' According to Aliber, 'if speculation drives the spot and forward markets in the same direction rather than in the opposite direction, it is destabilizing.' A more general view is that if speculation pushes the exchange rate beyond or below a critical level from where return is impossible or very difficult, it is destabilizing. On the other hand, advocates of a flexible exchange rate believe that speculation cannot be destabilizing. It may be concluded from the above that if speculators buy when a currency is weak and sell when it is strong, the speculation is stabilizing.

4. Currency Swap

Currency swap is a kind of foreign exchange transaction in which there is a spot sale of a currency and a forward purchase of the same currency in a single sale-purchase transaction. The currency swap type of foreign exchange transactions are usually made by the banks. It is essentially an interbank transaction. To explain it further, let us suppose that HDFC bank receives a payment of \$1 million which it will need after three months. It spot sells it to SBI against the Indian currency from whom it will make a forward purchase after three months. Both spot sale and forward purchase deals are made under a single transaction. This is known as currency swap.

4.2.6 Spot and Forward Transactions

Foreign exchange transactions, depending on the time gap between the settlement and the transaction date, are classified into spot transactions and forward transactions.

In case of spot transactions, even though the name suggests spot transactions, an immediate or on-the-spot transaction doesn't take place. The settlement of spot transactions takes place within two days of the transaction date. During the two-day

period, the parties that are associated with the transaction arrange to effect the exchange of a deposit denominated in one currency for a deposit denominated in the other currency. In other words, during the two-day period, the necessary crediting and debiting of banks that are situated in different locations are carried out. In certain cases, the settlement is carried out after the deal. In case the foreign trading centres are situated in the same time zone, it will be possible to settle the deal on the very day the deal is carried out. These types of transactions are known as 'cash transactions' or 'short-date transactions' as they can give way to immediate exchange of currencies that are involved in the transaction.

The exchange rates in which the spot transactions are carried out are known as the 'spot rate'. These transactions can also be rolled over at a cost is based on the interest rate differential between the two currencies. The trader will earn interest in case the trader is long in the currency with a higher rate of interest. On the contrary, the trader will pay interest in case the trader is short in the currency with a higher rate of interest.

On the other hand, in case of forward transaction, the parties enter into a forward contract which permits the sale or purchase of a particular amount of a foreign currency at a future date at an exchange rate that has already been agreed upon while entering the contract. Thus, in case of forward transaction, there is no need for immediate settlement and the transactions are settled on any date that has been predetermined after the transaction date. After the deal date, the date of settlement of the forward transactions may be 30, 60, 90, 120 or 180 days. The transaction may be further referred to as a 30 day forward, 60 day forward and so on depending on the days in which a forward transaction may be settled. The forward transactions are very important in the sense that they increase currency risks across countries. These transactions are also very flexible and can be customized to meet the specific needs of a trader with regard to the amount, currency and the date of the settlement. Sometimes, a deal can be carried out by a trader to exchange one currency for another currency immediately with an obligation of reversing the exchange at a specified future date.

For example, the transaction date for a deal of Saudi riyal against the India rupee is March 23 and traders have decided to finalize the deal after one month of its spot transaction date, that is, on April 25. In this example, March 23 is the transaction date, March 25 is the spot transaction date, March 25 April 24 is the calendar month and April 25 is the settlement date. If there is holiday on the final decided date of the forward transaction, then traders have to shift the forward transaction date to the next business day as in spot transaction. Thus, in the above example, if there is a holiday on April 25 in India, then the settlement date will be shifted to the next day which is April 26.

However, if the settlement date is not possible in the current year, then the date is shifted forward according to day difference which is approximately equal to month difference rather than accurate month difference. For example, the transaction date of Italian lira against the Indian rupee is settled for December 27 and traders have decided to finalize the deal after two months of its transaction date which is February 29. Consider that the year of settlement date is not a leap year and thus, February 29 does not exist. Therefore, accurate two months difference will not be possible for deciding the settlement date. In this example, February 28 will be decided as final date after adding approximate two months difference which is not accurate month difference. The main purpose of the

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forward transaction is to motivate the contracts and make surety for receiving the money for the transactions. Banks always do the transactions on forwarded fixed date. Some authorized dealers until January 1997 fixed deals with their customer for the maturity time of more than six months by getting approval of Reserve Bank of India (RBI) on the basis of the contract. But after that, the criteria of RBI approving the contract were removed. Margin of these transactions is determined on the basis of currency rate which existed between dealing date and settlement date. Some traders such as banks mostly use day differences such as 93 days or 139 days to forward their contract. Such contracts are known as broken date or odd date contract. A contract in which currencies are purchased or sold using only forward transactions is known as outright forward contract

The combination of spot transaction and forward transaction is known as 'swap transaction'. In the swap transaction, currencies are temporarily exchanged between traders. This means, a trader can buy a currency using spot transaction and sell the same currency through forward transaction. A contract in which double reversing forward transaction is done is known as forward-forward swap transaction.

4.3 MECHANISM OF CURRENCY DEALING

Primary price makers are responsible for making foreign exchange market because they decide the currency price for buying and selling among the participants of the foreign exchange market. Currencies are represented in different ways in the foreign exchange market. The International Standard Organization (ISO) has specified a three-letter code for every currency.

The three letter codes representing different currencies used in foreign exchange market are:

- **USD:** US Dollar
- **GBP:** British Pound
- **JPY:** Japanese Yen
- **CAD:** Canadian Dollar
- **EUR:** Euro
- **CHF:** Swiss Franc
- **AUD:** Australian Dollar
- **SEK:** Swedish Kroner
- **NLG:** Dutch Guilder
- **BEF:** Belgian Franc
- **FRF:** French Franc
- **ESP:** Spanish Peseta
- **ITL:** Italian Lira
- **INR:** Indian Rupee
- **DEM:** Deutsche Mark
- **SAR:** Saudi Riyal

Check Your Progress

1. What is a fixed exchange rate system?
2. Enumerate the functions of a foreign exchange market.
3. What is foreign exchange market?
4. What is the structure of the forex market?
5. What is understood by foreign exchange controls?
6. What types of transactions take place in the forex market?

The dealing process of different banks in the foreign exchange market is known as interbank dealing. Different banks are involved in the foreign exchange market as primary price makers. Primary price makers are also known as professional dealers of the foreign exchange market. There are two ways of dealing—warehousing the dealing and back-to-back dealing—for trading currencies between two or more professional dealers.

1. Warehousing the Dealings

In this type of dealing, a professional dealer asks another professional dealer about the currency price for trading. If the other professional dealer is ready for trading the currency, then both professional dealers communicate with each other using short forms of the communication. The short form of communication contains two-way quote for representing the currency price. An example of such communication is given below:

Thursday, 14 August 9.35 a.m.

BANK X: Bank X calling. EUR-USD 30 please.

BANK Y: '25-40'

BANK X: 'Mine'

BANK Y: OK. I sell EUR 30 million against USD at 0.7340 value 14 August. CITY ABC for my USD to you.

BANK X: MNO_BANK F' Furt for my EUR. THANKS & BYE

In the above example of short forms of communications, two banks, Bank X and Bank Y are communicating with each other. The first line in the example represents the day, date and time of the communication. In the second line, Bank X asks about euro versus US dollar quote from Bank Y. The third line is the answer from Bank Y that specifies a two-way price in which price for buying a US dollar against euro and price for selling a US dollar are quoted. All the dealers of the foreign exchange market know actual price of currency. Therefore, only last two decimals of the actual price are specified in the third line of the example for answering Bank X. The full quotation of rate of US dollar can be as 0.7325-0.7340, which is the bid rate and ask rate of Bank Y for buying and selling a euro. Number 25 and 40 are the hundredth of the hundredth of the actual rate and known as points or pipes in foreign exchange market. For small denomination currencies such as Japanese Yen, points represent the hundredth of the actual rate of the currency. The difference between actual selling and buying price is known as bid-ask spread or bid-offer rate, which is 0.0015 or 15 pipes in the above example.

Note: If a non-bank customer calls a professional dealer asking the currency prices, then the dealer uses actual currency rate such as 0.7325-0.7340 for answering the caller.

In the fourth line of this example, Mine indicates that the prices of Bank Y are acceptable to Bank X and Bank X is ready to buy 30 million euros. If Bank X wants to sell the currencies, then it would have to use euro instead of Mine. In the fifth line, Bank Y confirms the amount, rate, date of the dealing and place of bank. Last line of the example represents the termination of the communication after the deal with Bank X is finalized.

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2. Back-to-back Dealing

Back-to-back dealing takes place when a professional dealer asks for currencies that are at present not traded by another professional dealer. In this type of dealing, first a professional dealer, say A, asks for currency price from another professional dealer, say B, for warehousing the deal. If the second professional dealer B is not interested to warehouse the deal with the first professional dealer A, then it calls a third professional dealer, say C, to confirm whether or not the dealer is interested in trading currency with the first professional dealer A. Here, second professional dealer B plays a role of mediator between first professional dealer A and third professional dealer C. If the third professional dealer C is interested, then its currency price is quoted to the first professional dealer A. If the first professional dealer A accepts the currency price, then second professional dealer B asks the first professional dealer A to communicate with the third professional dealer C. First professional dealer A uses same communication statements as the statements used in the warehousing to third professional dealer C for dealing procedure.

Position of the bank

Participation of banks in the interbank dealing depends on the position of banks in the foreign exchange market. Position of the bank depends on the selling and buying of currencies rather than the bid-ask spread rate of the bank. The bid-ask spread rate represents the margin of the bank. i.e., the difference between buying and selling of the currencies determining the position of the traders in the foreign exchange market. Take for example, a bank that sells more US dollars than it has bought, this indicates a short position in the foreign exchange market. However, if a bank buys more US dollars than it has sold, then this indicates long position in the foreign exchange market. Position of the bank in the foreign exchange market represents the profit and loss condition of the bank that depends on the variability of the exchange rate for a currency.

When a bank realizes that it is in an undesirable position in the foreign exchange market, then it will adjust its bid-ask spread rate by setting an appropriate price for its currency to create a balance between deals. For example, if a bank has overbought Italian lira than euro and wants to adjust its bid-ask spread rate for these two currencies, it has to change the currency price from 1.2300-1.2320 to 1.2310-1.2320. This means that the bank will offer more Italian lira per euro at the selling time and buy more Italian lira per euro. As a result, in the foreign exchange market, trust of one party depends on the position of the counterparty.

Society for Worldwide Interbank Financial Telecommunication (SWIFT)

All the dealings of currencies, currency rates and position of banks are decided by a large network called the Society for Worldwide Interbank Financial Telecommunication (SWIFT). SWIFT is a Belgian corporation that has a main office and a number of regional offices around the world connected through different media such as telephones and the Internet. SWIFT is responsible for handling all transactions done in foreign exchange market. When a trader makes a transaction in foreign exchange market, it gives all the information about the transaction to the nearest regional office or the main office of SWIFT. But information related to dealings, which are done through brokers, are not provided to the SWIFT because brokers reveal the identities of both parties in the foreign exchange market and get commission for the dealing from both the participants of the deal.

Check Your Progress

7. What is interbank dealing?
8. What is a long and short position in a foreign exchange market?

4.4 SIGNIFICANCE OF FOREIGN EXCHANGE RATE

Foreign exchange refers to a foreign currency or a claim related to a foreign currency. A £10 currency note, a £10 traveller's cheque or a demand draft drawn on a London bank would be considered foreign exchange.

The term foreign exchange, broadly speaking, includes bank deposits denominated in a foreign currency, foreign currency itself (bills and coins), and other short-term claims on foreigners expressed in foreign currency. Foreign exchange transactions are mostly related to purchases and sales of bank deposits which have the denomination of foreign currencies.

In the Indian perspective, foreign currency would refer to any currency that is not the Indian rupee. According to the Foreign Exchange Regulation Act of India, foreign exchange means foreign currency and it includes the following:

- All deposits, credits and balances payable in any foreign currency, and any drafts, travellers cheques, letters of credit and bills of exchange, expressed or drawn in the Indian currency but payable in any foreign currency
- Any instrument payable, at the option of the drawee or holder thereof, or any other party thereto, either in the Indian currency or in a foreign currency or partly in one and partly in the other.

Foreign exchange also refers to the mechanism by which the currency of one country gets converted into the currency of another country.

The foreign exchange market is where money denominated in a certain currency is traded with money denominated in some other currency. We need this type of trading because we need to buy and sell goods, render services to foreigners, invest in short-term and long-term securities across countries, foreign bilateral and multilateral assistance and so on.

The primary objective of the foreign exchange market is to facilitate trade between different countries and to facilitate investment made by one country in another. It is important to have some basic knowledge of the operations and mechanisms of the foreign exchange market to gain a fundamental understanding of international financial management.

International Currency Standards

Details of the countries and currencies of the world along with their symbols, subdivisions and the International Standard Codes (ISO 4217) can be found on the website www.forex.com. The names of the currencies of various countries have been standardized, and three letter codes have been adopted to refer to them. The United States dollar is referred to as USD, the first two letters referring to the country and the last one referring to the currency. Similarly, the Indian rupee is referred to as INR, the Japanese yen as JPY, the pound sterling as GBP, the European common currency euro as EUR and so on. Each currency has a number too.

4.4.1 Rate of Exchange

As you studied earlier on, each nation's money has a price in terms of other nations' money. Exchange rate is the price of one currency in terms of another. Knowledge of

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exchange rates is important because these rates connect the price systems of different countries. For example, a firm is interested in purchasing equipment which is available in the USA for \$10,000 and in England for £6,200 on 26 March, 1999. At the prevailing exchange rates, the firm would have to spend ₹ 4,21,900 for obtaining it from the USA and ₹ 4,22,034 for obtaining it from the UK. Thus, the firm would be better off obtaining it from the USA.

But bankers are in a position to give the customers the rates of any currency desired by them. Theoretically, for, n , currencies, the number of possible exchange rates would be $n(n - 1)$. There are roughly 180 currencies in the world. The exchange rates of important currencies are published by financial newspapers like the *Wall Street Journal*, *Financial Times*, and the *International Financial Statistics* published by IMF. Indian financial newspapers like the *Economic Times*, the *Financial Express*, *Business Line* and *Business Standard* also publish the exchange rates for a limited number of currencies relevant to Indian businessmen.

An exchange rate is a ratio between the currencies of two countries and can, may be stated in two ways which are as follows:

1. Rupee price of foreign currency or the number of units of foreign currency per unit of local currency, for example, ₹ 100 = \$2.3702 or £1.4691. This method in which the unit of home currency is kept constant and the exchange rate is expressed as so many units of foreign currency is known as 'indirect quotation'.
2. Price of rupee in terms of the foreign currency or number of units of local currency per unit of foreign currency, for example, \$1 = ₹ 42.19 or £1 = ₹ 60.07. This method, under which the exchange rate is expressed as the price per unit of foreign currency in terms of the home currency, is known as 'direct quotation'. Under direct quotation, the number of units of the foreign currency are kept constant and any change in the exchange rate is expressed by changing the value in terms of rupees.

It is important to make sure that the quotation is clearly understood when dealing with exchange rates.

Effective from 2 August 1993, India has switched to the direct method of quotation. It is easier now for the public to understand the cost of foreign exchange needed by them and the rupee receipts of foreign exchange earned by them.

Cross currency rates

All currencies are not traded on a daily basis. Even if two specific currencies are not traded in a particular market, bankers would still be in a position to give the customers the rates of any currency desired by them. This rate can be obtained by the chain rule method, and the rate is referred to as the cross rate. Let us take the middle rate and assume no transaction cost. Let us assume that the following rates are known:

- (1) If INR 48.9150 = 1USD (say Indian Rupees per USD)
- (2) And If 1 USD = 0.66842 GBP (say GBP per USD)
- (3) What 1 GBP = ? INR (say Indian Rupees per GBP)

Note that the first equation ends with the currency USD and the same currency is started in the second equation. Similarly, the second equation ends with GBP and the

third one starts with the same currency, thus forming a chain. Multiply the items on the LHS (left hand side) and the RHS (right hand side) separately. The LHS = 48.9150 and the RHS = 0.66842. Divide the LHS by RHS. The answer is ₹ 73.1800.

Or, $0.66842 \text{ GBP} = \text{INR } 48.9150$. One GBP = $48.9150 \div 0.66842 = ₹ 73.1800$

The same answer can be obtained in another way. Let us do the simple general mathematical calculations. Represent (1) as INR/USD, (2) as GBP/USD, (3) as INR/GBP.

Divide equation (1) by (2):

$$\frac{\text{INR/USD}}{\text{GBP/USD}} = \frac{\text{INR}}{\text{GBP}} \quad \dots 1.1$$

Using the information given, $\frac{48.9150}{0.66842} = \text{INR } 73.1800$

We can also multiply equation (1) by equation (2) if we use the inverse of equation (2), say USD/GBP. Similar exercises can be done for any number of currencies. Such information can be displayed in a matrix form as given in Table 4.1. Let us work out an example from the information given in Table 4.1.

1.0364 Euro = 1 USD
1 USD = 0.6685 GBP
1GBP = ? EURO

In other words, $0.6685 \text{ GBP} = 1.0364 \text{ EURO}$

Hence, $1 \text{ GBP} = 1.0364 \div 0.6685 = 1.5504 \text{ EURO}$.

Table 4.1 Cross Currency Rates

	USD	EUR	GBP	CHF	JPY	CAD	AES	SAR
US \$(USD)	–	1.0364	0.6685	1.5240	1.2245	1.5283	3.6727	3.7515
Euro (EUR)	0.9648	–	6450	1.4704	1.1815	1.4745	3.5435	3.6196
Pound Sterling (GBP)								
Sterling	1.4959	1.5504	–	2.2798	1.8318	2.2862	5.4940	5.6120
Swiss Franc								
(CHF)	0.6562	0.6801	0.4386	–	0.8035	1.0028	2.4099	2.4617
Yen (JPY, per								
100 yen)	0.8166	0.8464	0.5459	1.2445	–	1.2480	2.9992	3.0637
Canadian \$								
(CAD)	0.6543	0.6782	0.4374	0.9972	0.8013	–	2.4032	2.4548
UAE								
Dirham (AED)	0.2723	0.2822	0.1820	0.4150	0.3334	0.4161	–	0.0047
Saudi Riyal								
(SAR)	0.2666	0.2763	0.1782	0.4062	0.3264	0.4074	0.9790	–

Source: Business Standard, New Delh i, 22 June/23 June 2002, p.7

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Table 4.2 Exchange Rate List for various Currencies w.r.t to Indian Currency

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Currency Name	Import Rate	Export Rate	Effective From
Australian Dollar	55.35	53.95	19-JUL-2013
Bahrain Dinar	161.45	152.55	19-JUL-2013
Canadian Dollar	57.65	56.25	19-JUL-2013
Danish Kroner	10.6	10.25	19-JUL-2013
EURO	78.6	76.85	19-JUL-2013
Hong Kong Dollar	7.7	7.55	19-JUL-2013
Japanese Yen	60.3	58.8	19-JUL-2013
Kenya Shilling	70.4	66.1	19-JUL-2013
Kuwait Dinar	213.7	201.15	19-JUL-2013
New Zealand Dollar	47.3	45.9	19-JUL-2013
Norwegian Kroner	10.00	9.70	19-JUL-2013
Pound Sterling	90.55	88.45	19-JUL-2013
Saudi Arabian Riyal	16.25	15.35	19-JUL-2013
Singapore Dollar	47.45	46.35	19-JUL-2013
South African Rand	6.2	5.85	19-JUL-2013
Swedish Kroner	9.1	8.85	19-JUL-2013
Swiss Franc	63.65	62.05	19-JUL-2013
UAE Dirham	16.55	15.65	19-JUL-2013
US Dollar	59.65	58.65	19-JUL-2013

Source: Assessed from the website http://www.cybex.in/International-Trade-Resources/Exchange_Rates.aspx on 29 July 2013.

Table 4.2 gives a comparison of exchange rate of Indian currency with other countries.

4.4.2 Exchange Rate Determinants

Exchange rates respond quickly to all sorts of events – both tangible and psychological. The movement of exchange rates is the result of the combined effect of a number of factors that are constantly at play. Economic factors, also called fundamentals, are better guides to how a currency moves in the long run. Short term changes are affected by a multitude of factors which need to be examined carefully.

In recent years, global interdependence has increased to an unprecedented degree. Changes in one nation’s economy are rapidly transmitted to that nation’s trading partners. These fluctuations in economic activity are reflected almost immediately in fluctuations of currency values. These changes in exchange rates expose all firms engaging in export import operations, as also multinationals with integrated cross border production and marketing operations. It would be useful for all of them to be aware of the various factors that influence exchanges rates. Through a study of these factors and the trend of movements in the value of a particular currency, an experienced businessman may be able to forecast the possible future movement of that currency. This will enable him (i) to estimate his risk and (ii) to make an informed, prudent decision regarding whether it would be worthwhile for him to undertake the risk or not. The factors determining

exchange rates can be classified into two categories: (i) Primary determinants
(ii) Secondary determinants

1. Primary Determinants: Demand and Supply, and Domestic Economic Policies

(a) **Demand and supply:** Demand and supply of a particular currency are the most important factors affecting its exchange rate. The supply of foreign exchange to a banking system comes from the following:

- Export of goods and services; inflow of foreign capital through foreign direct investment and portfolio investment; profits, interest, dividend and other incomes earned and repatriated to the country by investors abroad; money spent by foreign travellers; expenditure incurred by those involved in foreign diplomatic missions and other international organizations in India; foreign bilateral and multilateral aid, foreign grants and gifts; and repayment of loans and interest payments by foreigners.

The demand for foreign exchange comes from the following:

- The import of goods and services; outflow of capital through foreign direct investment and portfolio investment; profits, interest, dividend and other incomes earned by foreigners/corporate bodies and repatriated to their country; Indian travellers going abroad for education, medical treatment; pleasure; expenditure incurred by embassies abroad; bilateral loans/aids granted to other countries; subscription payment to international organizations; grants and gifts to other friendly countries; repayment of foreign loans and interest payment; etc.

All these transactions can be classified into three classes which are as follows:

- (1) Purchases and sales for trading purposes
- (2) Speculative deals by professional dealers
- (3) Protective movements by substantial holders

Multinational corporations have certain protective movements in place for their funds to avoid losses. In general, if a country has an import surplus, the exchange rate is likely to depreciate; and in case of export surplus, it is likely to go up.

Factors affecting imports and exports affect exchange rates as well. A few examples in this regard are as follows:

- (i) Change in the country's resource endowments, for instance, the discovery of North Sea oil in the UK and natural gas in the Netherlands pushed up the value of the British pound and the Netherlands guilder.
- (ii) Change in comparative advantage shift in the demand from the US to Japanese automobiles in the USA and elsewhere pushed up the value of yen.
- (iii) Rise in labour cost and loss of competitiveness of a country's export may erode the value of its currency.
- (iv) The demand for a currency can be increased by making it cheaper.

At this stage, it is worthwhile to discuss something about speculative transactions. Speculation involves a conscious assumption of risks. Speculators take a definite view about currency movements and take an open position. They buy or sell

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currencies according to their estimates of what the future exchange rate is likely to be from those who want to buy or sell currencies to hedge or to eliminate the speculative element in their transactions. For example, if the bulls expect the dollar to go up, they purchase dollars forward at current prices to sell later at higher rates. If bears expect the dollar to go down, they sell forward at current rates to purchase later at a lower price. Accounts are usually settled by payment of differences. A person can choose to behave like a hedger in some cases and like a speculator for some currencies. Thus, there is no watertight compartment between hedgers and speculators. The significance of speculation is that speculators create pressures in the market and may ultimately affect the spot rate as well. Speculative transactions are not permitted in India.

An UNCTAD study shows that the removal of restrictions on financial capital movements and increased financial mobility, have led to the decoupling of currency markets from trade, production and investment, and to the predominance of the speculative component of the market in the determination of exchange rates. A study by Robert Horde and Andrew Rose also found exchange rates moving with speculators' expectations for more than economic fundamentals.

(b) Domestic economic policies: Policies affecting the internal purchasing power of the currency concerned or, in other words, the relative inflation rates, also affect exchange rates. A country with a rate of inflation higher than other countries may witness a decline in the value of its currency relative to other currencies, and vice versa. It is based on the purchasing power parity theory (PPP) formalized by Gustav Cassel. The PPP theory maintains that exchange rates will tend towards the point at which their international purchasing power is equal. Since inflation erodes a currency's purchasing power, the difference between the inflation rates in two countries will determine how far one currency erodes in terms of the other, i.e., how exchange rates move. There are two questions that arise in this context. They are as follows:

- Which is the base year when purchasing powers were equal? The choice of the base year is arbitrary in most cases and can make a big difference to the PPP analyst
- What is the right way to measure inflation in two countries?

Price indices, either of consumer prices or wholesale prices, may not be a good measure as they cover items which are not internationally traded.

There is yet another aspect which affects exchange rates—the increasing importance of capital flows between various countries. As a result, exchange rates are affected not just by the movements of goods. PPP as a determinant of exchange rates has proved inadequate in explaining exchange rate movements in the short term. Partly, this is because it ignores the importance of transport, insurance and other costs in assessing the relative costs of goods. But at the same time, the inclusion of relative costs and prices of non-traded goods in the measurement of domestic inflation rates makes the comparison between these inflation rates unreliable in determining the exchange rate equilibrium given that capital flows can influence short-term exchange rate values. Nevertheless, PPP theory has been shown to have more validity in predicting the long-term movements of exchange rates. Countries that persistently experience relatively high inflation

rates eventually also experience depreciation in the value of their currencies on the foreign exchange market under a floating exchange rates regime.

A study of 10 countries for the period 1953–77 showed that countries with higher inflation rates such as the UK and Italy had depreciating currencies whereas those with lower inflation rates such as West Germany and Switzerland had their currencies rising in value.

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2. Secondary Determinants

(a) **Interest rate differentials:** Foreign exchange markets and exchange rates are quite sensitive to movements in interest rates. This is because financial markets are becoming more closely linked due to the following:

1. The growing interest in international investment
2. The elimination or constraints on the mobility of capital to a large extent
3. More rapid means of communication

Most investors would like to move their funds from a country having lower interest rates to a country having higher interest rates. Such funds are usually termed as 'hot money'. If the interest rate in the UK is higher than the interest rate in the USA, investors would find it more profitable to invest funds in the UK and would purchase pounds and sell dollars in the spot market, leading to an upward movement in pound sterling. In fact, the United Kingdom very often uses interest rate as a weapon to push up the 'pound'.

However, if the rise in the interest rate is due to people expecting a higher inflation rate or bigger budget deficits, there is reason to doubt the strength of the currency as it would not lead to higher investment. The role of interest rate differences, thus also depends upon what it is caused by. For example, in the early 1980s, interest rates in the UK were pushed way up to reduce demand. But that led to an exceptionally strong appreciation of sterling, and thus, marked a deterioration in the competitiveness of the UK industry. Similarly, a steady increase of German interest rates between 1988 and 1990 led to a substantial inflow of capital and a rise in the DM.

(b) **Expectations and other psychological factors:** Very often, these factors have a considerable influence on the exchange rates. Capital flights or short-term capital movements are an obvious example. The expectations of corporate finance managers, foreign exchange traders and potential speculators do have a profound influence on the exchange rates. These expectations again depend on various factors like the country's economic policy and economic development, including balance of payments, the discovery of new resources, political stability, movements of capital and so on. The behaviour of the major participants in the foreign exchange market may make the exchange rate move differently from that determined by economic fundamentals because of their 'instinct'. Arbitrage and speculative transactions also cause movements in exchange rates, albeit in opposite directions.

Role of expectations

A financial decision means a decision to sell or buy foreign currency. Exchange rates are crucially dependent upon future exchange rate movements as well. At any time for a given currency, there may be a rough balance of expectations among market participants. This means that at the current exchange rate, buyers

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and sellers exert an offsetting influence and the exchange rate remains reasonably stable. But something may happen to change the expectations, such as a change in the government policy and the import policy or a civil disturbance like the Kargil conflict. Once the balance of expectations is upset, everybody tries to adjust their position by bidding or offering the affected currency. As more of them expect the currency to rise, commercial purchases of that currency speed up and sales are delayed. As more expect the currency to fall, purchases are delayed and sales speed up. The dynamics of the subsequent changes in the interest rate depend upon market reactions to the factor that stimulate the initial rate movement and the speed and sharpness of the rate change. Often, when some traders believe that the movement has gone too far, they step in and provide a counterweight to the further bids and offers of that currency. Their purchases or sales of currency tend to slow down or reverse the rate of movement. But occasionally, the movement develops momentum. The factor that triggers the initial rate movement may either have a powerful effect on expectations or a string of good (or bad) news may follow. Traders and the like may then re-assess the outlook for that currency and conclude that a major re-adjustment in the rate is appropriate, and accordingly keep buying or selling the currency. Often, the market assessment is not drawn up very carefully. Even though the factor that caused a sharp change in exchange rate may not be all that important, most businessmen may hop on the bandwagon before it gets too late. If the sentiment about the future exchange rate is predominantly bearish, it will have its impact on the spot exchange rate as well, leading to its depreciation. If the sentiment about the future exchange rate is bullish, the spot rate is likely to go up. If for some reason or the other, trading becomes one sided, central banks may intervene to provide the counterweight that may not be forthcoming from the market itself.

- (c) **Political events:** Events such as a change in the government can have a dramatic impact on the exchange rate even before any change in the government policies actually takes place. This occurs on the assumption that changes will be made because of previous experience with the particular party, or because of certain stated intentions in their pre-election platform. Political stability induces confidence in the investors, and encourages capital inflow into the country. This has the positive effect of strengthening the currency of the country. On the other hand, if the political situation in the country is unstable, it makes the investors withdraw their investments. The resultant outflow of capital from the country weakens the currency. News of political disturbance in different parts of the world often causes the US dollar to appreciate as investors buy dollars, seeking a safe haven for the money in the world's largest economy.
- (d) **Central bank's intervention:** The foreign exchange market is of great importance to central bankers because of the impact that exchange rates have on a country's balance of payments and its competitive position in world markets. Hence, very often, central banks find it necessary to intervene or influence market conditions or exchange rate movements.

Intervention of the Central bank has two kinds of effects:

- (i) Ordinary demand and supply effect—They have the same impact on exchange rate as a purchase or sale by any other market participant.

- (ii) In addition, the central bank intervention or its absence may have a continuing influence on market expectations. It is through the timing and visibility of their operations that the monetary authorities provide indirect information about official attitudes towards current exchange market conditions although market participants may interpret them in different ways while taking their own decisions whether to buy or sell a currency.

Since 1973, central banks have intervened in foreign exchange markets in varying degrees and for different reasons. One important objective has been to seek to counter disorderly markets. There is no precise definition of disorderly trading, but indications include:

- Share fluctuation in the exchange rates
- Reluctance of bank traders to make two way markets,
- A distinct widening in the bid office spreads, and
- A tendency for rate movements to accumulate in one direction.

Even when there is an agreement over what constitutes market disorder, there may be differences of opinion over what to do about it.

Approach 1—To avoid intervention except in very select circumstances. Here, market disorder caused by economic or financial developments would not normally call for intervention. Intervention should be used sparingly. As foreign exchange fluctuations reflect disparities in economic performance between countries, markets can be stabilized only if these fundamental imbalances are removed. Very often, foreign exchange intervention can only buy time and may not actually assist in getting the policy adjustments as required. Hence, intervention should be used sparingly, mainly as a component of a major stabilization package.

Approach 2—Regular intervention is necessary to smoothen out day-to-day fluctuations in exchange rates, but in an even-handed manner without trying to influence the long term course of rates. Intervention is justified as a shock absorber to maintain order in market conditions.

Approach 3—A more active management of exchange rate is necessary if the market disorder continues for a longer time period. Markets may overshoot reasonable equilibrium levels due to what is called the ‘bandwagon’ effect, and market participants lose sight of long-term economic fundamentals. Intervention is therefore necessary to lower the exchange rates to levels that are compatible with ultimate economic objectives.

However, several central banks are committed to intervention in their exchange markets under international or regional agreements. For example, in the European monetary system, the members establish the limits to narrow the range of fluctuations between their respective currencies, while collectively floating vis-à-vis the dollar. Central banks of the European Union intervened in dollars and in each other’s currencies to maintain those limits. With the advent of euro, however, this is no longer true.

To conclude, following are the points that may be considered:

- (a) Intervention should not try to hold a fixed line of resistance against fundamental trends.
- (b) Intervention purchases should never be pushed to such a point that the resultant domestic money supply is affected.

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- (c) Intervention is not the final cure. It should be seen as a makeshift measure to gain time until fundamental factors or adjustment policies produce results.
- (d) Coordinated intervention does affect the exchange rates of particular currencies. For example, the dollar went up in the first week of January 1992 in expectation of a coordinated action.
- (e) The authorities cannot know what the right exchange rate is but they can diagnose when an exchange rate is excessively out of line and has to be corrected.

A seminal study 'Does Foreign Exchange Intervention Work?' by Kathryn M. Dominguez and Jeffery A. Frankel says that forex intervention can prick a speculative bubble, and it is the most appropriate instrument in such a situation. The authors argue that when authorities are prepared to intervene at particular upper and lower limits, they tend to have more success in stabilizing the currency with a smaller amount of intervention than if they publicly announce these limits ahead of time.

A Federal Reserve Bank of New York Research paper by Juan H. Hung concludes that central banks may secretly use volatility changing strategies to manage exchange rate levels. The US Fed frequently intervenes covertly in the foreign exchange market. The US intervention reduced both yen/dollar and DM/dollar exchange rate volatilities during the 1985-86 post-Plaza Accord period, but increased both volatilities during 1987-89. These seemingly puzzling results are easily explained. In the post-Plaza period, a volatility reducing strategy was logical because its objective was to bring down the dollar in an orderly fashion when the dollar was already on a downward trend. In contrast, volatility enhancing strategy was a rational choice in Japan in the 1990s because the dollar was roughly at a desired level and the policies' objective shifted to maintaining an implicit target band. In June 1999, Japan sold its own currency and signalled that it was willing to let the yen drop to support the economy and help the nation, flagging exports.

4.5 EXCHANGE RATE QUOTATIONS

The value of a currency is tracked down in the form of another currency by direct and indirect quotes. Base currency represents the left part of a paid currency and the right side represents the counter currency. This is done in order to know what the worth of one unit of base currency is in terms of counter currency. For example, if EUR/USD is represented as 1.3511, this would mean that to purchase 1 euro, one has to pay 1.3511 USD. There are two types of quotes, which are as follows:

- (a) **Direct quote:** When the number of units of home currency to deal in one unit of foreign currency is given it is a direct quote.

For example: \$1 = INR 62.50

- (b) **Indirect quote:** When the number of units of foreign currency is given to deal in one unit of home currency.

For example; ₹1 = US\$.016.

Trading of currency can be done by two ways.

Long trade: In order to appreciate the base currency, you will purchase the currency at a lower rate and sell it off when the price increases.

Check Your Progress

- 9. Define exchange rate.
- 10. What are the factors that influence exchange rate of currencies?

Short trade: When you expect the value of the base currency to depreciate in the near future, you will sell it off at a higher price now and purchase it in the future when its rate depreciates.

4.5.1 Spread

The difference between quotes is called spread. Spread may either be bid–ask spread or ask–bid spread. You can represent currency quotes in two different prices: (i) an ask price (sell), and (ii) a bid price (buy). Spread is basically the difference between the bid/buy and the ask/sell price. The broker is paid spread as a commission in a hidden way.

PIP stands for ‘percentage in point’ and it can be defined as the lowest change in price that a currency pair can make. In other words, it is the last digit in the value of a currency pair. If the EUR/USD moves from 1.3511 to 1.3515, it raises 5 pips.

Determinants of Spread

The main determinants of spread are as follows.

- **The currency being traded:** If the currency is fairly traded, the spread will be smaller than the currency that is rarely traded. For dollar, the spread will be smaller than the spread for the Danish krone. This is because the dollar is a fairly traded currency in the Indian Market whereas the Danish krone is not.
- **The currency volume being traded:** If the volume of the currency traded is large, the AD tends to quote lower spreads because the cost of service required per unit of currency traded falls.
- **The nature of organization making quotes:** The spread of quotes depends on the nature of the organization making quotations. If a bank is making a quote, the spread will be smaller as compared to the money changer or a finance company, which has obtained the license to deal in foreign exchange. The basic reason for this lower spread by banks is that banks, being large organizations, deal with bulk retail customers, thus reducing the cost of service per unit of currency traded.
- **Overall understanding of dealers about economic conditions and the forex market:** If the forex dealer perceives larger fluctuations in the economic conditions in the near future and thinks that the risk is going to increase, the dealer starts expanding the spread. However, otherwise the usual spread continues.

Usually, these spreads are regulated by the foreign exchange dealers’ associations (in India by the Foreign Exchange Dealers Association of India). These associations fix the charges per unit of currency traded.

For example, on 21 June 2012, the interbank rates for one \$1US were ₹ 55.87 /98 indicating that the buying rate was ₹ 55.87 and the selling rate was ₹ 55.98. The difference between the two rates is called exchange rate spread and that is the source of profit for the bank. The spread is lower in currencies where the volume traded is large and is higher where the volume traded is small. As the volume involved in the case of inter-bank dealings is very high, and bankers would like to make a profit while dealing in currencies, they have developed certain maxims to help themselves.

A foreign exchange rate is quoted as the foreign currency per unit of the domestic currency. In an indirect quote, the foreign currency is a variable amount and the domestic currency is fixed at one unit.

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For example, in the US, an indirect quote for the Canadian dollar would be C\$1.17 = US\$1. Conversely, in Canada an indirect quote for US dollars would be US\$0.85 = C\$1.

For direct quotations, they 'buy low and sell high', i.e., they pay fewer units of the home currency for buying a fixed unit of foreign currency but receive more units of home currency while selling the same.

- (a) For indirect quotations, they 'buy high and sell low', i.e., they acquire more units of a foreign currency for a fixed unit of home currency but part with fewer units of foreign currency while selling it.

Banks are able to manage within this small margin. In the case of merchant rate, however, the percentage spread is much higher as the gap between the buying and selling rates is more.

4.5.2 RBI's Reference Rate

The Reserve Bank of India also publishes a rate called RBI reference rate. This rate is based on 12 noon rates of a few select banks in Mumbai. The SDR-Rupee rate is based on this rate. Based on the RBI reference rate for US dollar and middle rates of the cross currency quotes at 12 noon, the exchanges of US dollar, Pound Sterling, EURO and yen are published.

For example, the reference rate from RBI's published data is presented below:

The Reserve Bank of India's Reference Rate for the US dollar was ₹ 55.1515 and the Reference Rate for Euro was ₹ 67.6030 on July 20, 2012. The corresponding rates for the previous day (July 19, 2012) were ₹ 55.3830 and ₹ 68.0639 respectively. Based on the Reference Rate for the US dollar and middle rates of the cross-currency quotes, the exchange rates of GBP and JPY against the Rupee are given below:

Date	Currency	
	1 GBP	100 JPY
July 19, 2012	86.7464	70.47
July 20, 2012	86.5768	70.22

Note: The SDR-Rupee rate will be based on the reference rate.

Types of Exchange Rate Quotes

There is no single quote for exchange rate. A number of rates exist at the same time between two currencies. The rates differ between currency notes and foreign currency denominated travellers cheques. Interbank rates are the rates quoted for trading in currencies between banks, and merchant rates are the rates quoted by banks for merchants, e.g., exporters and importers.

Merchant Rates

The Reserve Bank of India has authorized some commercial banks to undertake foreign exchange transactions with merchants. The inward/outward foreign exchange remittances of banks include (a) telegraphic transfer (TT) (b) mail transfer (MT) (c) demand draft (DD) and (d) bills for clearing. In recent years, electronic transfer has become one of the most important and speedy ways of transferring funds from one centre to another. Telegraphic transfer of funds from one centre to another is done by way of instructions through telex, telegram or cable. Telex has been the most important mode of transferring

funds for reasons of security and record-keeping. Wherever facilities were available are now being replaced by electronic transfer facilities. A mail transfer is an order in writing to pay to the beneficiary the sum mentioned therein. A demand draft is a written order issued by a bank on another bank (correspondent) or its own branch at a different financial centre equivalent to the amount already received by the banker. Similarly, there are selling and buying rates for import and export bills. TT selling rates are for outward remittances in foreign currency and TT buying rates are meant for clean inward remittance. In order to avoid cut-throat competition among its members, the Foreign Exchange Dealers Association of India has issued guidelines for quoting the various rates.

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4.5.3 Interpreting Foreign Exchange Quotation

In the foreign exchange market, quotations adopted by the Association Cambiste Internationale (ACI) are used for determining the exchange rate for a currency. ACI is an international financial market association in which foreign exchange professionals work for market development. A quotation is represented by a pair of three-letter SWIFT codes for currencies separated by an oblique or a hyphen. The currency that appears before the hyphen is the base currency and the currency after the hyphen is the quoted currency. Some examples of quotation are:

- **USD/JPY:** In this quotation, US dollar is the base currency and Japanese yen is the quoted currency.
- **EUR/GBP:** In this quotation, euro is the base currency and the pound is the quoted currency.
- **INR/AUD:** In this quotation, Indian rupee is the base currency and Australian dollar is the quoted currency.

Thus, an exchange rate quotation is the representation of the number of units of quoted currency per unit of the base currency. A quotation can also consist of prices of two currencies separated by a hyphen. The price before the hyphen is known as the bid price and the price after the hyphen is called the ask or offer price. The bid price is the price at which a trader wants to buy base currency against the quoted currency. The ask price is the price at which a trader wants to sell the base currency against the quoted currency.

Quotations are used to indicate the exchange rate of currencies. These contain the names of the currencies and their exchange rates. Normally, each country has two types of quotations, direct and indirect. A direct quotation represents the number of units of home currency of the country per unit of foreign country.

An indirect quotation or reciprocal quotation represents the number of units of foreign currency for per unit of home currency of a country. This type of quotation is the inverse representation of the direct quotation, so it is also called inverse quotation. An example of an indirect quotation is USD 2.1010 per INR 100 in India indicating that the number of units of the rupee is 100. An indirect quotation represents the exchange rate of currency in European terms, which represents the number of units of a currency per US dollar. A quotation that is used to represent the exchange rate for two non-dollar currencies is known as cross rate; for example, GBP/EUR represents non-dollar currencies pound and euro. Sometimes, traders use short forms for the quotations; for example, INR/JPY: 1.2940/1.2960 can be represented in the following forms:

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- 1.2940/60, when the price of currencies is changed to decimal points.
- 40/60, when two traders regularly interact for trading a particular currency pair because they know the big figure of the currency rate. Big figure means starting digits of the rate that is 1.29 in the 1.2940/60 quotation.

All the quotations used in the foreign exchange market are divided into three main categories. These categories are:

- Spot quotation
- Outright forward quotation
- Swap quotation

Spot quotation

Spot quotations are used to represent the exchange rate of a currency according to the present rate in the market. It must be in such a form that no arbitrage situation is created in the market.

Arbitrage situation

Sometimes, there exist market situations which help participants of the market to make a profit without any risk. These market situations are known as arbitrage situations. Participants of the market can gain by making some currency transactions with such banks which have quoted different prices for the same currency pair.

Inverse quote and two-point arbitrage

Two-point arbitrage is the condition when there is a chance to buy a currency from one market and sell that currency in another market where the price of the currency is higher. For example, Bank A in France has quoted USD/EUR: 1.9345/ 1.9350 and Bank B in America has also quoted for the same currency pair as EUR/USD: 0.5345/0.5360 which is the inverse or reciprocal quote of Bank A. This means ask rate of Bank A, which is EUR/USD, is the reciprocal of the bid rate of Bank B, that is, USD/EUR. This means reciprocal of the ask rate of Bank A is $1/(\text{EUR/USD})$ which is equal to the bid rate of Bank B. You can also say that the EUR/USD bid rate of Bank B implies $1/(\text{USD/EUR})$ ask rate of Bank A and EUR/USD ask rate of Bank A implies $1/(\text{USD/EUR})$ bid rate of Bank B. In this way an inverse quotation is used in a two-point arbitrage situation.

The bid rate in the quotation of Bank B should be overlapped with the ask rate in the quotation of Bank A to avoid two-point arbitrage situation.

Triangular arbitrage

Triangular arbitrage is that market situation in which a bank provides some exchange rates that are not directly inverse of the exchange rate of another bank but provides an indirect way to make a profit without any risk to the trader.

Check Your Progress

11. What is direct quotation and indirect quotation?
12. What are the types of spread?
13. What is the use of spot quotations?
14. What is triangular arbitrage?

4.6 ARBITRAGE

Arbitrage operations refer to the process of buying and selling of currencies. The sale/purchase of currencies takes place within an unstable market. The prices are affected

by the supply and demand of currencies and arbitrage helps in adjusting the market to equilibrium. The process of buying in one market and selling the same in another market is known as arbitrage.

Arbitrage profits result from the following actions:

- The difference in exchange rates at two different exchange centers,
- The difference, due to interest yield which can be earned at different exchanges.

Thus, depending upon the nature of deal, arbitrage may be either space or time arbitrage. **Space arbitrage** is because of separation of two exchange markets due to physical dispersion wherein the rates may vary. In **time arbitrage**, an investor may gain by executing a spot and forward deal to buy and sell a currency.

For example, a customer can gain from arbitrage operation by purchase of USD in the local market at cheaper price prevailing at a point of time and sell the same for sterling in the London market. The sterling will then be used for meeting his commitment to pay the import obligation from London.

Types of Arbitrage

- Spatial arbitrage/geographical arbitrage:** It is the simplest form of arbitrage. In this type of arbitrage, the arbs look for pricing discrepancies across geographically separate markets.
- Merger arbitrage/risk arbitrage:** It consists of buying/holding the stock of a company that is the largest of a takeover while shorting the stock of the acquiring company. Usually the market price of the target company is less than the price offered by the acquiring company. The spread between these two prices depends mainly on the probability and the timing of the takeover being completed as well as prevailing level of interest rates. The bet in a merger arbitrage is that such a spread will eventually be zero, if and when the takeover is completed. The risk is that the deal breaks and the spread massively widens.
- Municipal bond/municipal bond relative value/cross-rate arbitrage:** In a given market, exchange rates for currencies A and B and for currencies A and C imply an exchange rate called a cross-rate, between currencies B and C. If the rate implied for B and C does not match the actual rate between B and C in some other market, an arbitrage opportunity exists. To exploit arbitrage opportunity, one can trade only the exchange rates actually given.

4.6.1 International Arbitrage

An exchange rate can be defined as the price of a currency in terms of another. It can be explained as the number of units of currency B in terms of a unit of currency A or vice versa. Thus, the exchange rate between US dollar and British pound can be stated as 1.7656 dollars per pound or 0.5664 pound per dollar. When we state the price of goods in terms of money, the most common way of doing so is by stating it in terms of units of money per unit of the good and not vice versa. For example, rupee 10 per litre of water. The choice of unit, though, is subject to the convenience of the user. Thus, the rupee-dollar rate is usually stated as number of rupees per dollar while the rupee-yen rate is stated as number of rupees per 100 yen.

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Arbitraging between Banks

It is not possible for all banks to have the same and identical quotes although we always hear one market rate or exchange rate for any two given currencies at any particular point of time. The exchange rate quotations may be similar to each other for any two given banks but they cannot be exactly the same in almost most of the cases. Therefore, it may be possible for a company to benefit by trading or exchanging currencies through one particular bank and not through the other. We will now discuss and try to understand the possible relationships between the quotes offered by different banks.

1. Suppose banks A and B are quoting:

	A	B
GBP/USD:	1.4550/1.4560	1.4538/1.4548

We will represent this as:

• — • Bank A

bid ask

• — • Bank B

bid ask

A situation in which the ask and bid rates overlap, it will give rise to an arbitrage opportunity. Pounds can be bought from B at \$1.4548 and sold to A at \$1.4550 for a net profit of \$0.0002 per pound without any risk or commitment of capital. One of the basic tenets of modern finance is that markets are efficient and such arbitrage opportunities are quickly spotted and exploited by alert traders. The result will be, bank B will have to raise its ask rate and/or A will have to lower its bid rate. The arbitrage opportunity will disappear very fast. An opportunity of making a huge amount of profit from arbitrage opportunities is not going to stay for a very long time because there will be arbitrageurs who are going to move from investing in one market to the another and such an opportunity is going to be wiped out very soon.

2. Now suppose the quotes are as follows:

	A	B
GBP/USD:	1.4550/1.4560	1.4545/1.4555

As is evident from the quotations, there is no arbitrage opportunity because the ask and bid rates at two different banks are overlapping in nature. We can conclude that in order to prevent arbitrage that two quotes must overlap. In such a scenario, A would find itself competing with many other sellers of pound sterling and B would find itself amidst a large number of buyers of pound sterling and a lesser number of sellers.

Banks are always on the move for influencing the quote. Most corporate or large scale customers run a check on the rates being offered by various banks, but this is only when the sum involved is large. It must also be observed that usually the customers who make frequent jumps while using such services of various banks are not treated on the same scale as the more 'regular' customers. 'Regular' customers usually get better rates in the routine foreign exchange transactions.

Inverse Quotes and Two-point Arbitrage

Consider the following spot quotation:

USD/CHF: 1.4955/1.4962

Suppose this is a quote available from a bank in Zurich. At the same time, a bank in New York is offering the following spot quote:

CHF/USD: 0.6695/0.6699

In this situation, let us explore if there is an arbitrage possibility. Suppose we buy one million Swiss francs against dollars from the Zurich bank and sell them to the New York bank. The Zurich Bank will give CHF 1.4955 for every dollar it buys. It will cost us $\$(1,000,000/1.4955)$ i.e. \$6,68,700 to acquire the Swiss francs. In New York, the bank will give \$0.6695 for every CHF it purchases.

Thus, CHF 1 million can be sold to the New York bank for $\$(0.6695 \times 1000000)$ i.e. \$6,69,500. One can make a risk-less profit of \$800 with the help of a few phone calls. Obviously, the CHF/USD rates implied by the Swiss Bank's USD/ CHF quotes and the New York bank's CHF/USD quotes are out-of-line.

Recall that (CHF/USD) ask is the rate that applies when the bank sells Swiss francs in exchange for dollars. But this is precisely the deal we did with the Zurich Bank and for each Swiss franc we bought, we had to pay $\$(1/1.4955)$ which is nothing but $1/(\text{USD/CHF})$ bid. In the same way, the (CHF/USD) bid implied by the Swiss bank's USD/CHF quotes would be the amount of US dollars it would give when it buys one CHF. It requires CHF 1.4962 for every USD it sells. This means that it will give USD $(1/1.4962)$ when it buys one CHF. Thus, the (CHF/USD) bid implied by its USD/CHF quote is $1/(\text{USD/CHF})$ ask. Thus, we have:

Implied (CHF/USD) bid = $1/(\text{USD/CHF})$ ask

Implied (CHF/USD) ask = $1/(\text{USD/CHF})$ bid

To prevent arbitrage, the New York bank's (CHF/USD) quotes must overlap the (CHF/USD) quotes implied by the Swiss bank's quotes. The latter work out to 0.6684/0.6687. A CHF/USD quote such as 0.6686/0.6690 will not lead to arbitrage though it may lead to a one-way market for the banks. The rates found in the markets will obey the above relations to a very close approximation.

The arbitrage transaction described above, viz., buying a currency in one market and selling it at a higher price in another market is called 'Two-Point Arbitrage'. Foreign exchange markets eliminate two-point arbitrage opportunities very quickly if and when they arise.

4.7 FORWARD RATES

It is the currency rate quoted now for delivery at some future specified date, such as, in three months time. The exchange at the date in the future will be at the price agreed upon now. The forward rate is at a discount on the spot price. This is called the 'swap rate,' which will be added or deducted from the spot rate to arrive at the forward rate. The 'swap rate' is all termed as forward premium or forward discount.

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The discount will be added to the spot rate and premium will be subtracted from the spot rate.

This may be understood with the help of the following example:

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Particulars	Rate	Period (Month)	INR
1 USD	SPOT	0	61.25
1 USD	FORWARD	1	61.40
1 USD	FORWARD	3	61.80
1 USD	FORWARD	6	62.10
1 USD	SWAP	1	00.15
1 USD	SWAP	3	00.55
1 USD	SWAP	6	00.85

$$\text{Forward Premium/Discount} = (\text{Forward} - \text{Spot/Spot}) \times (12/n) \times (100)$$

Here, 'n' indicates the number of months remaining in the forward contract.

For example, if we need to calculate the swap rate based on three months forward rate as given in the above example,

$$\text{Swap rate} = (61.80 - 61.25) \times 61.25 \times 12/3 \times 100 = 3.59\%$$

4.7.1 Forward Exchange Contracts

It is a firm and binding agreement between a bank and its customers to buy or sell an agreed amount of currency at a date of exchange fixed at the time when the contract is made for performance by delivery of and payment for the stated amounts on or between two specified futures dates.

Forward exchange contracts are inclusive of the following features:

- A forward rate contract
- An amount of currency to be either bought or sold
- An exchange of currency agreed to be made at some point or period of time in the future.

For example: RIL has purchased machinery worth US\$5,00,000 from the US which is payable in 3 months time. RIL expects that the frame will weaken over a period. He has asked his banker for forward exchange cover. The rates existing at the time are:

Particulars	Buying Rate	Selling Rate
Spot rate 1\$	61.25	61.80
Forward Discount for 3 months	Re. 0.40	Re. 0.50

The Rupees exposure to US\$ purchased in forward market for delivery in 3 months is as follows:

$$\begin{aligned} \text{INR} &= \text{Amount (selling rate + forward discount for three months)} \\ &= 5,00,000 \quad (61.80 + .50) \\ &= 5,00,000 \times 62.30 \\ &= 3,11,50,000 \end{aligned}$$

4.8 FOREIGN EXCHANGE MARKET

In India, all the dealings in foreign exchange market are regulated by FEMA. The foreign market in India has three segments. The first segment consists of transactions between RBI and the Authorized Dealer (AD). ADs are normally commercial banks. The second segment is the interbank market in which the banks deal among themselves. The third segment is the retail segment in which the ADs deal with the corporate clients and other retail customers. The branches of ADs are divided into three categories that are as follows:

1. **Category A:** In this category, the branches maintain independent foreign currency accounts with overseas branches in their own names.
2. **Category B:** The branches in this category do not maintain independent foreign currency accounts but have powers to operate the accounts maintained abroad by their head offices or the category A branches.
3. **Category C:** The branches that are not allocated in A or B category but are still in forex business are included in this category.

In the retail segment, money changers also operate. These are licensed dealers in the currency market to cater to the needs of retail customers. In the interbank market, the quotes appear in swap points. There are currency brokers who match the buyers and sellers and work on commission basis.

RBI sets the day-to-day exchange rates. Corporate houses in India are restricted to international foreign exchange market transactions to the extent of their actual international trade transactions. They cannot speculate in the foreign exchange market. REER (real effective exchange rate) is used to monitor the Indian rupee exchange rate.

Foreign Exchange Controls

Whenever an MNC imports or exports to a foreign country, it must become familiar with the foreign laws that might affect its trade with that country. Many countries of the world control their foreign exchange. A number of countries particularly those who are politically allied with US enforce a system of controls. Foreign exchange control is one of them.

Foreign exchange controls are the different types of control measures that are used by a government on the buying and selling of foreign currencies by either the nationals of that country or by the non-resident. The most commonly foreign exchange controls that are used world over are as follows:

- Preventing the use of foreign currency within the country
- Preventing the residents from possessing the foreign currency
- Preventing currency exchange to government approved exchanges
- Fixed exchange rates
- Putting a limit on the amount of currency that is being imported or exported

Objectives of Foreign Exchange Control

- **To improve BOP:** Exchange control is one of the measures available to improve the balance of payments positions. This can be achieved by restricting imports by means of exchange control.

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- **To restrict unnecessary consumption of foreign currency:** In countries like India that are in the developing stage, the nationals are crazy for a particular imported good. They can go to any extent to buy imported goods but exchange control prevents such high quantity of imports.
- **To make imports of essential goods possible:** Due to the non-availability of scarcity within the country, the developing countries generally have to import capital goods, know - how and certain essential inputs and consumer goods. By giving priority to such imports in the allocation of foreign exchange, exchange control may ensure availability of foreign exchange for these imports.
- **To protect domestic industries:** Exchange control may also be employed as a measure to protect domestic industries from foreign competition.
- **To protect the domestic policies:** Exchange control is formulated to enable a country to follow domestic policies of anti deflationary nature without being disturbed by factors such as recession etc.
- **To check the recession-induced exports into the country:** If foreign economies are undergoing recession when the domestic economy is free from it, the decline in the prices of foreign goods, due to the recession, may encourage their exports into the country not yet affected by recession. Exchange control may be employed to check such recession- induced exports into the country.
- **To maintain the exchange rate stability:** Maintenance of exchange rates stability is among the major objectives of exchange control.
- **To control speculation:** Exchange control may be employed to control speculations in the foreign exchange market.
- **To regulate foreign companies:** Exchange control may also seek to regulate the business of foreign companies in the country.
- **To regulate export and transfer of securities:** Exchange control may be employed also for the purpose of controlling the export and transfer of securities from the country. The FERA, example, prohibited the sending or transferring of securities from the country to any place outside India, without the permission of the Reserve Bank of India.
- **To facilitate discrimination and commercial bargaining:** Exchange control offers scope for discrimination between different countries. It could be use to accord exchange concession, on a reciprocal bases, between different countries.
- **To enable the government to repay foreign loans:** As the system of exchange control empowers the government to acquire foreign exchange from the residents of the country, it becomes easy for the government to repay foreign loans.
- **To lower the price of national securities held abroad:** It may be possible to reduce the prices of national securities held abroad by preventing nationals from buying them. This would enable the government to purchase such securities at a lower price.

There are two other objectives that are as follows:

- To freeze foreign Investments and prevent repatriatin of funds.
- To get revenue by the business of foreign exchange.

4.8.1 Indian Foreign Exchange Market

The Indian foreign exchange market is a three-tier market.

1. First Tier of Foreign Exchange Market

Under the first tier, transactions take place between the Reserve Bank of India (RBI) and the authorized dealers (ADs). The responsibility and authority of foreign exchange administration lies with the RBI. This authority has been provided to the RBI under the Foreign Exchange Regulation Act. RBI is considered to be the apex body and for convenience has delegated the responsibility of foreign exchange transactions to ADs which are the scheduled commercial banks. A Foreign Exchange Dealers Association of India has been formed which makes rules and regulations regarding how business will be conducted and also coordinates with the RBI in the administrative functions related to foreign exchange control. It basically acts as a clearing house. Apart from these commercial banks, there are also moneychangers who operate in these markets. Many are well-established companies or hotels who are functioning under an RBI license. In the first tier of foreign exchange market, the RBI buys and sells foreign currency from and to ADs as per the prevalent exchange control regulations from time to time. Before the Liberalized Exchange Rate Management System was introduced, ADs sold foreign currency at rates administered by the RBI. RBI sold pound sterling, US dollars, spot as well as forward to the ADs in order to cover ADs primary market requirement. However, with the introduction of a unified exchange rate system, the RBI now intervenes in the market to stabilize the value of the rupee.

2. Second Tier of Foreign Exchange Market

The interbank market forms the second tier of the foreign exchange market. In the second tier of foreign exchange market, transactions take place between ADs. Although, ADs mainly conduct their business within their own country, but through interbank markets are able to conduct business with banks in different countries in order to cover their position. Although business transactions can be done independently, many prefer to conduct their business through recognized brokers. One important aspect regarding interbank market transactions is that the brokers are not permitted to execute any deal on behalf of their own account or for jobbing purposes. Interbank transactions taking place within the country are both spot as well as forward. There may be swap transactions. During these transactions any permitted currency may be used. However, in transactions which deal with overseas ADs, transactions will only be made in US dollar and Pound Sterling. This is basically done as presently the Indian markets lack depth in other currencies. While dealing with overseas banks, it needs to be ensured that only genuine transactions take place that are related to customers in India and are done for the purpose of adjusting or squaring the bank's own position. Forward trading with overseas banks is allowed if it covers genuine transactions or for the purpose of squaring currency position. It needs to be ensured that the forward trading does not exceed more than six months. In case an import is made on deferred payment and the period exceeds six months, then permission has to be obtained from RBI.

Though forward contracts are permitted to be cancelled in India, it needs to be referred to RBI. Prior to 1994-95, the banks were responsible to cover these forward transactions with RBI, but now RBI does not provide this cover. With RBI's permission,

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the banks trade with complete freedom in the forward market. In order to cancel a forward contract, it needs to enter into a reverse transaction as per the current going rate. For instance, if US\$1000 was bought forward on 1 January 2013 for a period of three months at ₹ 40/US\$. However, due to some reasons gets cancelled on 1 February 2013. Since the cancelling includes selling the US dollar at the rate prevalent on 1 February 2013. If the exchange rate on 1 February 2013 is ₹ 39.50/US\$, then a loss of ₹ 500 will occur. (The dollar sells for ₹ 39.50 minus the dollar bought during 1 January 2013 when it was ₹ 40.00). This loss is incurred by the customer. Similarly, if the value of US dollar increases on the time of cancellation, then the customer will make profits in this transaction. Now cancelled forward contracts which fall within the time period of one year, may be re-booked as RBI now permits ADs to do so.

3. Third Tier of Foreign Exchange Market

The primary market where ADs make transactions in foreign currency with customers forms the third tier of the foreign exchange market. The third tier of the foreign exchange market primarily exists as the outcome of legal regulations which state that if Indian residents need to make foreign exchange transactions then they must take place via ADs. Primary market is inclusive of the following:

- Tourist exchange currency
- Exporters exchange currency
- Importers exchange currency

4.9 INDIA AND FOREIGN CURRENCY MARKETS

The operation of Indian banks in the international currency markets has been allowed since 1969, particularly in Singapore and Hong Kong. In the 1970s, the State Bank of India (SBI) was permitted to enter the market. Over the past few years, the SBI has raised funds for the public sector units, such as the Shipping Corporation of India and later for units in the private sector also (Orissa Aluminum Project). So far loans raised in these markets were well within \$50 billion, such as for purchase of aircraft by Air India or drilling equipment by the Oil and Natural Gas Corporation (ONGC). The SBI has also been instrumental in raising loans for the Birlas for a project in Indonesia and for the Tata Iron and Steel Company (TISCO) from the US and the UK banks. In 1980, a \$680 million eurodollar loan was raised for the Orissa Aluminum Project. It is thus clear that private parties and banks in India are increasingly being allowed to either borrow from this market or operate in this market. The recent decline in flow of funds from the International Bank for Reconstruction and Development (IBRD) and other world bodies had an added impetus to the growth of these operations.

Eurodollar loans were raised for the Bombay High for its fourth and fifth stages. The rate at which the loan of \$680 million was raised for Orissa Aluminium was 17 per cent—slightly above the prevailing London interbank offer rate of 16.5 per cent. This rate could float up or down depending upon the London Interbank Offered Rate (LIBOR). But even so, it is cheaper than that at which some countries have borrowed (Brazil, for example) namely at 2 per cent above the LIBOR. The rates have fallen steeply later and the private sector in India is allowed commercial borrowing from abroad.

The fact is that, we have refrained from borrowing from this market for a long time because of its high cost and the commercially-going rate charged therein. In addition to the high cost of borrowing in it, India was deterred from this market because of uncertainty of interest cost due to its variability every six months under the floating interest rate clause and shorter maturities on Euro loans unsuitable to the developmental needs of India. We continued to enjoy until recently the benefit of soft loans from the International Development Association (IDA), the IBRD and the International Monetary Fund (IMF). But now a stage is reached when we have almost exhausted these resources. Then the only alternative appears to be to allow the private sector to borrow from these markets, compete with their counterparts abroad effectively in both the output markets and input markets as much as in financial markets. When private companies borrow at commercial rates, they have to make enough foreign exchange earnings to pay for the servicing charges on them. The projects must then be of long life but a short gestation period and investment should lead to productive asset creation and enlarge the export potential of the country to repay installments due on the loans. India has also problems of identifying projects with a short gestation but a long duration and commercially viable projects. Besides, the commercial fees and strict adherence to schedules of repayment, were the further deterring factors.

The Indian banks and the Industrial Credit and Investment Corporation of India (ICICI) have been borrowing from international capital markets and forming financial bodies abroad for commercial and industrial purposes. The Government of India has been encouraging more recently the use of eurodollar funds in flexible and yet discretionary manner for commercial enterprises, such as Orissa Aluminium and Rastriya Chemicals. A number of companies, such as Gujarat Narmada Valley Fertilizers, Telco, Tata Power, J K Synthetics, etc., were able to raise funds from non-residents or foreign capital markets. The Government has permitted the IDBI, the ICICI and other financial institutions to raise foreign resources through syndicated loans in the eurocurrency markets. After making rupee convertible since March 1992 on trade account, a number of private sector companies like Reliance, has been allowed to borrow in these markets abroad.

4.10 SUMMING UP

- The foreign exchange market or currency market is a global decentralized market for trading of currencies.
- Under the fixed exchange rate system, the government of a country determines the value of its currency against a fixed amount of another currency.
- Floating exchange rates can be broadly classified into two types: clean float and dirty float.
- The exchange market provides facilities for hedging anticipated or actual claims or liabilities through forward contract in exchange.
- Anyone who exchanges the currency of one country for the currency of another currency will have to participate in the foreign exchange market.
- Commercial banks have been authorized by the central banks to undertake the activity of conversion of one currency into another.

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Check Your Progress

15. What do you understand by arbitrage operations?
16. State the types of arbitrage.
17. Name the participants in the three-tier foreign exchange market in India.

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- A foreign exchange market is an unregulated global market which does not have a physical address but trading takes place like the Bombay Stock Exchange or the New York Stock Exchange (NYSE).
- A forex market has three tiers. On the top are the largest banks in the world that account for most of the daily traded volumes
- The governments and the central banks of countries play an important role in the forex market.
- Commercial firms, institutional investors and hedgers form the mid level participants.
- Retail forex brokers are another set of significant players in the market.
- The last layer of the forex market is formed by the small speculators who access the market through retail forex brokers.
- Foreign exchange transactions, depending on the time gap between the settlement and the transaction date, are classified into spot transactions and forward transactions.
- The exchange rates in which the spot transactions are carried out are known as the spot rate. These transactions can also be rolled over at a cost is based on the interest rate differential between the two currencies.
- Different banks are involved in the foreign exchange market as primary price makers. Primary price makers are also known as professional dealers of the foreign exchange market.
- In warehousing dealing, a professional dealer asks another professional dealer about the currency price for trading.
- Back-to-back dealing takes place when a professional dealer asks for currencies that are at present not traded by another professional dealer.
- When a bank realizes that it is in an undesirable position in the foreign exchange market, then it will adjust its bid-ask spread rate by setting an appropriate price for its currency to create a balance between deals.
- In the Indian perspective, foreign currency would refer to any currency that is not the Indian rupee.
- Exchange rate is the price of one currency in terms of another. Knowledge of exchange rates is important because these rates connect the price systems of different countries.
- All currencies are not traded on a daily basis. Even if two specific currencies are not traded in a particular market, bankers would still be in a position to give the customers the rates of any currency desired by them.
- In recent years, global interdependence has increased to an unprecedented degree. Changes in one nation's economy are rapidly transmitted to that nation's trading partners.
- Demand and supply of a particular currency are the most important factors affecting its exchange rate.

- Most investors would like to move their funds from a country having lower interest rates to a country having higher interest rates. Such funds are usually termed as 'hot money'.
- A financial decision means a decision to sell or buy foreign currency. Exchange rates are crucially dependent upon future exchange rate movements as well.
- Since 1973, central banks have intervened in foreign exchange markets in varying degrees and for different reasons. One important objective has been to seek to counter disorderly markets.
- The difference between quotes is called spread. Spread may either be bid–ask spread or ask–bid spread.
- Inter-bank rates are the rates quoted for trading in currencies between banks, and merchant rates are the rates quoted by banks for merchants, e.g., exporters and importers.
- Arbitrage operations refer to the process of buying and selling of currencies. The sale/purchase of currencies takes place within an unstable market.
- It is a firm and binding agreement between a bank and its customers to buy or sell an agreed amount of currency at a date of exchange fixed at the time when the contract is made for performance by delivery of and payment for the stated amounts on or between two specified futures dates.
- Foreign exchange controls are the different types of control measures that by used by a government on the buying and selling of foreign currencies by either the nationals of that country or by the non-resident.

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4.11 KEY TERMS

- **Real effective exchange rate (REER):** It is the weighted average of a country's currency relative to an index or basket of other major currencies adjusted for the effects of inflation.
- **Speculators:** A person who trades derivatives, commodities, bonds, equities or currencies with a higher-than-average risk in return for a higher-than-average profit potential.
- **Spot rate:** The exchange rates in which the spot transactions are carried out are known as the spot rate.
- **Swap transaction:** The combination of spot transaction and forward transaction is known as swap transaction, where currencies are temporarily exchanged between traders.
- **Cross rate:** The currency exchange rate between two currencies, both of which are not the official currencies of the country in which the exchange rate quote is given in.
- **Hot money:** It is the money that flows regularly between financial markets as investors attempt to ensure they get the highest short-term interest rates possible.
- **Percentage in point:** It is the lowest change in price that a currency pair can make.

4.12 ANSWERS TO ‘CHECK YOUR PROGRESS’

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1. The currency system in which the regulator tries to keep exchange rate constant between domestic currency and foreign currencies is known as the fixed exchange rate system.
2. The functions performed by the foreign exchange market are:
 - (i) To facilitate transfer of power of purchasing between countries
 - (ii) To provide credit for foreign trade
 - (iii) To furnish facilities for hedging the risks of foreign exchange
3. A foreign exchange market is a place where currencies of different countries are bought and sold against each other are called foreign exchange market.
4. The foreign exchange market has different layers. On the top are the largest banks in the world, followed by the government and central bank of a country. Commercial firms, institutional investors and hedgers form the mid level participants. Retail forex brokers are another set of significant players in the market. The last layer of the forex market is formed by the small speculators who access the market through retail forex brokers.
5. Foreign exchange controls are the different types of control measures that by used by a government on the buying and selling of foreign currencies by either the nationals of that country or by the non-resident.
6. Foreign exchange transactions, depending on the time gap between the settlement and the transaction date, are classified into spot transactions and forward transactions.
7. The dealing process of different banks in the foreign exchange market is known as interbank dealing.
8. A long position is made when the trader buys a currency. The long position is made by the investor if he expects the currency to later rise in value. A currency trading short position is maintained when a trader sells a currency in the expectation that it will depreciate in value. Contrary to common sense, for this trade the investor wants the currency to drop, and only then will he make a profit.
9. Exchange rate is the price of one currency in terms of another. It can also be defined as ratio between the currencies of two countries.
10. The factors determining exchange rates can be classified as primary determinants and secondary determinants. Under the primary determinants are factors such as demand and supply, and domestic economic policies. And under the secondary determinants are factors such as interest rate differentials, expectations and other psychological factors, political events and intervention of the central banks.
11. Direct quotation is a foreign exchange rate quoted as the domestic currency per unit of the foreign currency. In other words, it involves quoting in fixed units of foreign currency against variable amounts of the domestic currency. Indirect quotations is a currency quotation in the foreign exchange markets that expresses the amount of foreign currency required to buy or sell one unit of the domestic currency. An indirect quote is also known as a ‘quantity quotation’, since it

expresses the quantity of foreign currency required to buy units of the domestic currency.

12. Spread, the difference between quotes, can either be bid–ask spread or ask–bid spread.
13. Spot quotations are used to represent the exchange rate of a currency according to the present rate in the market. It must be in such a form that no arbitrage situation is created in the market.
14. Triangular arbitrage is that market situation in which a bank provides some exchange rates that are not directly inverse of the exchange rate of another bank but provides an indirect way to make a profit without any risk to the trader.
15. Arbitrage operations refer to the process of buying and selling of currencies.
16. The types of arbitrage are:
 - (i) Spatial arbitrage/geographical arbitrage
 - (ii) Merger arbitrage/risk arbitrage
 - (iii) Municipal bond/municipal bond relative value/cross–rate arbitrage
17. The Indian foreign exchange market is a three-tier market. Under the first tier, transactions take place between the Reserve Bank of India (RBI) and the authorized dealers (ADs). The interbank market forms the second tier and the primary market where ADs make transactions in foreign currency with customers forms the third tier of the foreign exchange market.

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4.13 QUESTIONS AND EXERCISES

Short-Answer Questions

1. What is the role of the RBI in the foreign exchange market?
2. What are the objectives of foreign exchange control?
3. What are the factors that determine the position of the bank in the foreign exchange market?
4. What is the role of speculators in the forex market?
5. What are the determinants of spread?
6. What are forward rates and forward exchange contracts?
7. Write a short note on arbitrage.

Long-Answer Questions

1. Discuss the structure of the foreign exchange market. How is it regulated in India?
2. Discuss the types of foreign exchange transaction with help of examples.
3. What are the tangible and intangible factors that affect rate of exchange?
4. What are foreign exchange quotations? Explain with examples.
5. Explain the structure of the foreign exchange market in India.

4.14 REFERENCES AND SUGGESTED READINGS

NOTES

- Rajwade, A. V. 1995. *Foreign Exchange, International Finance and Risk Management*, New Delhi: Academy of Business Studies.
- Apte, P. G. 2010. *International Financial Management*. Noida: Tata McGraw-Hill.
- Bhalla, V. K. & Shivaramu, S. 1996. *International Business: Environment and Management*. New Delhi: Anmol.
- Baker James C. 1998. *International Finance: Management, Market and Institutions*. New Jersey: Prentice Hall.
- Haskin Mark E. 1996. *International Financial Reporting and Analysis*, Chicago: Irwin.

UNIT 5 EXCHANGE RATE THEORIES

Structure

- 5.0 Introduction
- 5.1 Objectives
- 5.2 Determination of the Exchange Rate in a Free Market: The Market Theory
 - 5.2.1 Derivation of the Demand Curve for Foreign Exchange
 - 5.2.2 Derivation of the Supply Curve for Foreign Exchange
 - 5.2.3 Criticism of the Market Theory
- 5.3 Purchasing Power Parity Theory
 - 5.3.1 Absolute Purchasing Power Parity Theory
 - 5.3.2 Relative Purchasing Power Parity Theory
 - 5.3.3 Empirical Test of the Purchasing Power Parity Theory
- 5.4 Monetary Approach to Exchange Rate Determination
 - 5.4.1 Overshooting Effects of a Rise in Money Supply
 - 5.4.2 Drawbacks of the Monetary Approach
 - 5.4.3 Empirical Test of the Monetary Approach
- 5.5 Portfolio Balance Approach to Exchange Rate Determination
 - 5.5.1 Portfolio Adjustment and the Exchange Rate
- 5.6 Interest Rate Parity Theory
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- 5.8 Unbiased Forward Rate Theory
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- 5.12 Key Terms
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- 5.14 Questions and Exercises
- 5.15 References and Suggested Readings

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5.0 INTRODUCTION

We have studied about exchange rate and the factors that determine the foreign exchange rate. The method of exchange rate determination has been changing over time. It also depends on whether the foreign exchange market is free or controlled and whether the government adopts a fixed or flexible exchange rate policy. As we had seen in the last unit, demand and supply of a particular currency are the most important factor affecting its exchange rate. The demand and supply theory, also known as the market theory of exchange rate, has been criticized. Despite its drawbacks, the theory remains the most effective theory in determining exchange rates.

In this unit, we will look at the various theories written in respect to the main determinant of future exchange rates. Although most of these theories give good reasons to explain what actually determines the rates between the currencies, we can argue that there are many factors that may cause a currency fluctuation.

5.1 OBJECTIVES

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After going through this unit, you will be able to:

- Describe how the exchange rate is determined under free market conditions
- Discuss purchasing power parity theory of exchange rate determination
- Explain the portfolio approach to exchange rate determination
- Analyse the monetary approach to exchange rate determination
- Interpret the differences in interest rate parity theory and unbiased forward rate theory
- Assess Fisher effect
- Discuss the methods of forecasting exchange rates

5.2 DETERMINATION OF THE EXCHANGE RATE IN A FREE MARKET: THE MARKET THEORY

The free exchange market refers to a market in which there is no restriction on foreign exchange dealings. The government does not intervene in the process of foreign exchange transactions and exchange rate determination; rather, it creates conditions for the exchange rate to be determined by the market forces of demand and supply under conditions of free sale and purchase of foreign exchange. Furthermore, the foreign exchange market does not refer to a particular place, but to the facilities provided by the bankers, brokers, and other specialized institutions which deal in foreign exchange. The foreign exchange market for a currency may be spread over all the countries in which its buyers and sellers are spread.

As mentioned above, the exchange rate is the price of one currency in terms of another, or the rate of exchange is the rate at which one currency is exchanged for another. The rate of exchange is a *price*, like all other prices under free market conditions. The exchange rate is determined by market forces, i.e., the demand for and supply of foreign exchange. The demand for foreign exchange arises basically from the demand for foreign goods and capital for the purpose of making payments abroad. Demand for foreign exchange also comes from the monetary authorities of a country and from speculators. On the other hand, the supply of foreign exchange arises from the exports of goods and capital because importers demand currency of the exporting country for making payments. In fact, the supply of foreign exchange arises from the demand for it. When a country demands a foreign currency, it supplies its own currency to purchase the foreign currency. In the process, it supplies its own currency. As noted above, the exchange rate is determined by market forces—the demand and supply. Therefore, before explaining the determination of the exchange rate, let us look at the derivation of the foreign exchange demand and supply curves.

5.2.1 Derivation of the Demand Curve for Foreign Exchange

The demand curve for foreign exchange is derived on the basis of the law of demand. Demand for foreign exchange arises from the demand for foreign goods, -services, and securities. As the law of demand reveals, there is an inverse relationship between the

demand for a product and its price. The exchange rate gives the price of foreign goods and services in terms of the domestic currency. Therefore, when the exchange rate is high, the demand for foreign goods and services is low and hence, the demand for foreign currency is lower. This kind of relationship between the exchange rate and foreign exchange is illustrated by the demand curve DD_1 in Figure 5.1. As the figure shows, at high exchange rates, the demand for foreign exchange (dollars) is lower. As the exchange rate declines, the demand for dollar increases.

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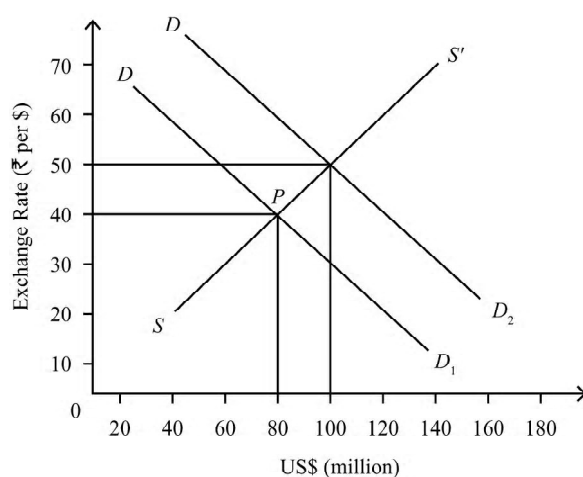


Fig. 5.1 Determination of the Exchange Rate

5.2.2 Derivation of the Supply Curve for Foreign Exchange

As regards the supply of foreign exchange, it comes from the central banks of the countries and foreign-exchange dealers. The derivation of the supply curve for foreign exchange is the reverse process of deriving the demand curve for foreign exchange. When the exchange rate is high, exports yield high returns. When exports of a country increase, the demand for its currency increases. So, the suppliers of foreign exchange increase its supply. And when the exchange rate is low, exporters tend to export less. As a result, the demand for foreign exchange decreases. Following the decrease in the demand for foreign exchange, its supply decreases. This kind of relationship between the exchange rate and supply of foreign exchange can be stated as, the supply of foreign exchange increases with increase in exchange rate and vice versa. This relationship between the exchange rate and supply of foreign exchange is illustrated by the supply curve SS' in Figure 5.1.

Determination of the Exchange Rate

To illustrate the determination of the exchange rate in a free market, let us suppose a two-country (India and the USA) and two-currency (rupee and dollar) model. Let us also suppose that the hypothetical demand and supply curves for dollars are given by DD_1 and SS' curves, respectively, in Figure 5.1. The demand and supply curves intersect each other at point P , where the demand for dollar (by India's importers) and supply of dollars are equal. As the figure shows, the exchange rate is determined at $\$1 = ₹ 40$, with the demand for and supply of dollars being equal at $\$80$ million. This exchange rate clears the foreign exchange market and is, therefore, the equilibrium rate of exchange. This exchange rate would keep in balance the autonomous transactions between India and the US, and would keep the balance of payments between the two countries in

equilibrium. In case the demand for dollars in India increases, the demand curve will shift upward to DD_2 , other things remaining the same. The exchange rate will then rise to $\$1 = ₹ 50$. This implies depreciation of the rupee and appreciation of the dollar, both by 25 per cent.

Let us now describe the factors that cause changes in the exchange rate.

Causes of Exchange Rate Fluctuations

The exchange rate determined by the market forces changes (increases or decreases) owing to changes in the factors which determine the demand for and supply of foreign exchange. The major factors which cause changes in the demand for foreign exchange and, thereby, a change in the exchange rate are described here briefly.

- When there is an increase in domestic prices owing to, say, a rise in the cost of production (foreign prices and cost remaining the same), it causes an increase in the demand for foreign goods, and hence, an increase in the demand for foreign exchange. -Consequently, the foreign exchange demand curve shifts upward causing a rise in the exchange rate. On the other hand, a fall in the demand for exports causes a leftward shift in the supply of the national currency. The ultimate result of the shifts in demand and supply curves is a change in the exchange rate.
- A rise in the real income of a country, other factors remaining the same, causes an increase in imports if imports are income elastic. An increase in imports causes an increase in the demand for foreign currency causing a rise in the exchange rate. The opposite happens when the real income of a country decreases.
- Domestic real income remaining the same, a rise in the real income abroad would tend to increase in demand for domestic exports and simultaneously foreign demand for the domestic currency, leading to a rise in the exchange rate.
- If the rate of interest in the domestic economy increases in relation to interest rates in foreign countries, the capital inflow increases and the outflow decreases. Consequently, foreign demand for the domestic currency increases in relation to the domestic demand for foreign currency. This causes an increase in the rate of exchange. A fall in the domestic rate of interest causes an outflow of capital, which has a reverse impact on the exchange rate.
- The inflow and outflow of short-term and long-term capital also causes a fluctuation in the exchange rate by changing the demand for foreign exchange. The inflow of capital appreciates the currency of the receiving country. And a capital outflow causes a depreciation in the currency of the investing country.
- The speculative purchase and sale of foreign exchange in the exchange market also affects the demand and supply of foreign exchange, resulting in a change in the exchange rate. This change depends on the effect of speculators' behaviour on the supply and demand conditions in the foreign exchange market.
- Structural changes in the economy, such as changes in technology, composition of GNP, and industrial innovations, cause a change in the cost structure. A change in the cost structure changes the price structure, which in turn changes (i) the pattern of foreign trade, and (ii) the pattern of inflow and outflow of funds. This kind of change brings about a change in the exchange rate.

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- Occasional changes in the exchange rate are also caused by such factors as political instability and uncertainty. Examples include the situation India faced in 1997–98; the economic crisis in countries having economic links as in the case of the South-East Asian crisis in early 1998; and changes in international political and economic relations like the one India faced after her nuclear blasts in May 1998.

5.2.3 Criticism of the Market Theory

The demand and supply theory, also known as the market theory of exchange rate, has been criticized on the grounds of its limited applicability. Some points of criticism are as follows:

- The market theory of exchange rate assumes that domestic price levels are independent of the exchange rate whereas there is a close link between them. A continuous rise in the general price level leads to a depreciation of the currency.
- This theory is applicable only where the exchange rate responds to changes in demand and supply conditions.
- The market theory works reasonably well only if exports of a country do not have a perfect substitute available in the domestic market.
- The equilibrium rate of exchange determined by market forces is supposed to be stable and to bring about automatic adjustments in the balance of payments. But experience shows that the process is not as automatic as predicted by the theory.

Despite these limitations, the market theory of exchange rate is considered to be better than other theories of exchange rate determination, as it better explains the state of affairs in the foreign exchange market and fluctuations in the exchange rate.

5.3 PURCHASING POWER PARITY THEORY

The purchasing power parity theory (PPP) of exchange rate determination states that the exchange rate between any two currencies equals the ratio of their price levels. This theory is said to have been originally formulated by Wheatley in 1802 and later by Blake in 1810. However, according to Krugman and Obstfeld, ‘The basic idea of PPP was put forth in the writings of 19th century British economists, among them David Ricardo (the originator of the theory of comparative advantage).’

Whoever might be the originator of the basic idea of the PPP theory, it was Gustav Cassel, a Swedish economist, who reformulated the PPP theory and developed the concept of an equilibrium rate of exchange in 1920. ‘This theory asserts that the relative values of different currencies correspond to the relation between the real purchasing power of each currency in its own country.’ In other words, under a free and inconvertible paper currency system, the rate of exchange between any two currencies is determined by their purchasing power in the respective currencies. This theory is called the purchasing power theory of the rate of exchange. The PPP theory has two versions:

- The absolute purchasing power parity theory
- The relative purchasing power parity theory

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Check Your Progress

1. What leads to supply of foreign exchange?
2. State two reasons for fluctuation of exchange rate.

5.3.1 Absolute Purchasing Power Parity Theory

According to the absolute version of purchasing power parity theory, the equilibrium exchange rate is determined in terms of the ratio of the absolute price levels in any two countries. The exchange rate under this version of the PPP theory is given as,

$$ER = \frac{P_A}{P_B} \quad (5.1)$$

where ER = exchange rate, P_A = price level in country A and P_B = price level in country B .

For example, suppose a basket of goods can be bought in India for ₹ 100 and in the US for \$2. In that case, the exchange rate between the Indian rupee (INR) and the US\$ will be determined as follows:

$$ER(\text{INR}/\$) = \frac{P_A}{P_B} = \frac{\text{₹}100}{\$2} = \text{₹}50$$

The absolute version of the PPP theory is based on the following assumptions:

- There are no transportation costs.
- There are no tariffs on imports and subsidies on exports.
- There is free trade between nations.

Criticism of the absolute PPP theory

The absolute version of the PPP theory has certain serious shortcomings which make its validity questionable.

- It ignores the effect of transportation costs which affect the final price paid by traders
- Many countries impose tariffs on imports and subsidize exports. These factors affect the price and, hence, the real purchasing power of the currency
- It takes into account only traded goods and services and ignores the price levels of non-traded goods which are part and parcel of the general price level. Also, the PPP theory ignores capital account transactions which do matter in exchange rate determination.

5.3.2 Relative Purchasing Power Parity Theory

The relative purchasing power parity theory is a modified version of its absolute version. While the absolute version assumes price level to remain constant, in reality, price levels do not remain constant. And a change in price levels is bound to change the exchange rate. The relative PPP theory gives a measure of the change in the exchange rate under the conditions of changes in relative prices. The relative PPP theory states that the relative change in the exchange rate over time is proportional to the change in the relative price level over a period of time. The formula for relative PPP theory is given as,

$$ER_N = \frac{P_{AN} / P_{A0}}{P_{BN} / P_{B0}} = ER_0 \quad (5.2)$$

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where:

- ER_N and ER_0 are the exchange rates in year N and base year 0, respectively
- P_{AN} and P_{A0} are the price levels in country A in year N and base year 0, respectively
- P_{BN} and P_{B0} are the price levels in country B year N and base year 0, respectively

In fact, the basic purpose of the relative PPP theory is to determine the equilibrium exchange rate under conditions of changing price levels. Also, the relative PPP theory can be used to measure the change in the exchange rate owing to a change in the price levels. For example, suppose there are two countries A and B and their respective price levels in the base year are given as $P_{A0} = 100$ and $P_{B0} = 100$. In this case, the exchange rate between the currencies of the two countries can be expressed as,

$$ER = \frac{P_{A0}}{P_{B0}} = \frac{100}{100} = 1$$

Now let the price levels in the two countries in year N change to $P_{AN} = 150$ and $P_{BN} = 200$, respectively. In that case, the *relative exchange rate (RER)* in year N between the two countries can be measured as follows:

$$PER_N = \frac{P_{AN} / P_{A0}}{P_{BN} / P_{B0}} = \frac{150/100}{200/100} = \frac{1.5}{2.0} = 0.75$$

This measure of relative PPP shows that the currency in country B has depreciated by 0.25 or by 25 per cent. The above calculation shows that if the price index in country A increases in year N from 100 to 150, i.e., 50 per cent, and the price level in country B increases from 100 to 200, the currency in country B depreciates by 25 per cent in year N due to a higher rise in its price level.

Criticism of the relative PPP theory

Most of the deficiencies of the absolute PPP theory apply also to the relative PPP theory of exchange rate. The relative PPP theory has been criticized also on the following grounds:

- It is based on the general price index of a country. This index included prices of both traded and non-traded goods and services whereas the exchange determination pertains only to internationally traded goods and services. Therefore, the relative PPP theory yields a misleading exchange rate.
- The base year and weightage of goods services used in the construction of the price index varies from country to country depending on the nature and structure of production. Therefore, the price index number does not reflect the relative price levels in the different countries. The variation in the exchange rate under this condition based on the relative price structure does not reflect the actual purchasing power.
- Apart from non-traded goods and services, certain kinds of services, such as banking, insurance, consultancy services, etc., are considered part of foreign transactions but they are not included in the price index number. Therefore, changes in relative prices do not reflect changes in the purchasing power of a currency.
- A large amount of capital transfers take place between nations, which affect the demand for foreign exchange. The change in the demand for foreign exchange

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does affect the exchange rate. But this kind of a change in exchange rate is not accounted for in the relative PPP theory.

- As Haberler has pointed out, the imposition of an embargo or tariffs, and the provision of subsidies, causes a change in the actual purchasing power of a currency. But such factors are not accounted for by the relative purchasing power theory.
- A change in the exchange rate depends, by and large, on the elasticities of reciprocal demand for foreign exchange but the PPP theory only recognizes a change in the exchange rate owing to changes in relative prices.
- The relative PPP theory postulates that relative commodity prices are the sole determinants of international transactions and that a change in relative prices is the sole determinant of the exchange rate. But in reality, changes in the exchange rate are also because of disequilibrium in BOP caused by capital transfers, service payments, and changes in real income.

In spite of these shortcomings, however, the PPP theory can be used as a first approximation of the equilibrium exchange rate for periods of frequent and high price changes. For a more -accurate measure of the exchange rate, other factors like capital flows, changes in consumer tastes and preferences, technological changes, and real income changes would have to be taken into account while measuring the purchasing power of a currency. Let us now look at the opinion of modern economists on the empirical validity of the PPP theory.

5.3.3 Empirical Test of the Purchasing Power Parity Theory

Most countries adopted a market determined floating exchange rate system after 1973. This system had its own problems and triggered great interest in the PPP theory. Many economists carried out empirical studies to test the validity of the PPP theory, for different periods. While the findings of some economists established the validity of the theory, the findings of some others refuted it. For instance, an empirical study carried out by Frankel⁴ in 1978 for the high-inflation period of the 1920s, found the PPP theory to be empirically valid. Kravis and Lipsey conducted a similar study for the period 1959–70 and McKinnon for the period 1953–77 and they found the PPP theory to be fairly valid. However, Kravis found in a similar study that the PPP theory had failed to hold in latter part of the 1970s. Other similar studies by Levich and Dornbusch produced the same result.

After Kravis, Levich and Dornbusch produced evidence of the collapse of the PPP theory, Frankel conducted further studies to test the empirical validity of the theory in the context of the dollar-pound exchange rate over the 1869–84 period. His studies revealed that there was deviation from what the PPP postulated but the deviation was very slow—it took four to five years for one half of the deviation to happen. Many other studies were carried out later by Frankel and other economists covering a longer period and more countries (150 countries). All these later studies confirmed Frankel's findings.

To conclude, the PPP theory works well in the case of traded goods, but not so well for non-traded goods; it also works well when a long time period (three to four decades) is considered, especially under the condition of 'purely monetary disturbances.' According to Krugman and Obstfeld, 'While there has been much controversy about the general validity of PPP, the theory does highlight the important factors behind exchange rate movements.'

Check Your Progress

3. State the assumptions the purchasing power parity theory is based on.
4. Give two points of criticism for PPP theory.
5. What is the role of relative purchasing power parity theory?

5.4 MONETARY APPROACH TO EXCHANGE RATE DETERMINATION

How we will discuss another important theory of exchange rate determination, known as the monetary approach to exchange rate determination. This approach combines the purchasing power parity theory with two other theories, viz., the neo-classical quantity theory of money and the Keynesian theory of interest, to explain the determination of the exchange rate. The concept of purchasing power parity has already been explained in the preceding section. Let us define the neo-classical quantity theory of money and the Keynesian theory of interest.

According to the neo-classical quantity theory of money, the total demand for money is expressed as

$$M_d = kPY \quad (5.3)$$

where M_d = demand for money, k = the ratio of total money income demanded for transaction purposes, P = price level, Y = real output, and PY = nominal national income (GDP).

Given Equation (5.3), suppose in India at a point in time, $P = ₹ 10$, $Y = 100$, and $k = MV = 1/5$. Given the numerical values of P and Y , India's PY (GDP) = 10 (100) = ₹ 1000. Since $k = 1/5$, the demand for money in India is given by the following:

$$M_d = k(PY)$$

$$1/5 (1000) = 0.2 (1000) = 200$$

Let us now look at the Keynesian theory of interest. According to Keynes, the rate of interest in a country is determined by the aggregate demand for and the aggregate supply of money. The aggregate demand for money is determined by the national income (GDP) and the supply of money is determined by the central bank and financial institutions. The aggregate supply of money in an open country can be expressed as

$$M_s = m(D_m + F_m) \quad (5.4)$$

where M_s = total money supply, m = money multiplier, D_m = domestic money supply, and

F_m = foreign component of money supply.

The equilibrium rate of interest is determined under the condition,

$$M_d = M_s$$

Given M_d in Equation (5.3) and M_s in Equation (5.4), the monetary sector equilibrium is determined where

$$k(PY) = m(D_m + F_m) \quad (5.5)$$

Note that at equilibrium, demand for money is equal to the money supply. This determines the equilibrium rate of interest and also the equilibrium of the monetary and real sectors.

Having introduced the building blocks, let us now explain the monetary approach to exchange rate determination. The monetary approach postulates that since the equilibrium of the domestic economy is determined by the equality of money demand and money supply ($M_d = M_s$), the equilibrium exchange rate is also determined by the

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equality of money demand and money supply. To prove this, let us suppose (following the PPP theory) that there are only two countries (A and B) and only one commodity (X) traded by the two countries. Suppose also that the demand for money and money supply in the two countries are given by the following:

Country A : Demand for money = M_{DA} , and supply of money = M_{SA}

Country B : Demand for money = M_{DB} , and supply of money = M_{SB}

Given their money demand and money supply, the equilibrium condition for the monetary -sector of country A is given as,

$$M_{DA} = M_{SA}$$

and that for country B as,

$$M_{DB} = M_{SB}$$

If the monetary sectors of both the countries (A and B) are in equilibrium, their real sectors are also in equilibrium. When both the monetary and real sectors in both countries are in equilibrium, their economies are equilibrium. Once countries A and B attain equilibrium, the price of commodity X in both the countries gets determined. Let the price of commodity X in countries A and B be given, respectively, as P_{XA} and P_{XB} . Under equilibrium conditions, the ratio of their respective prices of commodity X will equal the ratio of their respective money supply or the ratio of their money demand. This condition can be expressed in terms of money supply as,

$$\frac{M_{SA}}{M_{SB}} = \frac{P_{XA}}{P_{XB}}$$

With regard to the determination of the exchange rate, going by the PPP theory, the exchange rate (ER) between the currencies of the two countries (A and B) is determined in terms of their price ratios (P_{XA}/P_{XB}). Thus,

$$ER = \frac{M_{SA}}{M_{SB}} = \frac{P_{XA}}{P_{XB}} \quad (5.6)$$

If M_{SA} , M_{SB} , P_{XA} , and P_{XB} are given at a point in time, the exchange rate (ER) gets determined. In Equation (5.6), if P_{XA}/P_{XB} is given as $1/2$, it means that one unit of A 's currency is equal to two units of B 's currency. This is how the exchange rate is determined by a monetary approach under a *flexible exchange rate system*. Any change in money supply (M_{SA} and M_{SB}) will change the exchange rate (ER). For example, suppose country A doubles its money, with country B maintaining its money supply. In that case, the money supply ratio changes from M_{SA}/M_{SB} to $2M_{SA}/M_{SB}$ and, therefore, the price ratio (P_{XA}/P_{XB}) changes to $2P_{XA}/P_{XB}$. In numerical terms, the price ratio changes from $1/2$ to $2/2$. This means that one unit of currency A is equal to one unit of currency B . Or, currency A has depreciated by 100 per cent and currency B has appreciated by 50 per cent.

5.4.1 Overshooting Effects of a Rise in Money Supply

We have shown above how a rise in money supply affects the exchange rate, according to the purchasing power parity theory. However, this is not the end result of the increase in money supply. A rise in money supply affects also the interest rate. This change in the

interest rate has an additional effect on the exchange rate, which leads to an overshooting of the exchange rate. Before we close the discussion on the monetary approach to exchange rate determination, let us look at the overshooting effect of a rise in the money supply. Let us begin by looking at how a rise in money supply affects the exchange rate.

How Change in Money Supply Affects the Exchange Rate

The change in money supply in country *A* brings about two kinds of changes in *A*'s economy, viz., (i) change in the price level, and (ii) change in the interest rate. These economic changes in country *A* bring about changes in the exchange rate. Let us examine how an increase in money supply in country *A* affects its economy and what happens in country *B*.

What happens in country *A*?

As noted above, there are two effects—a price effect and an interest rate effect—of an increase in money supply in country *A*. Let us now look how these effects affect the exchange rate and the status of *A*'s currency.

- **The price effect** an increase in money supply in country *A* increases its domestic price level, as far as the quantity theory of money works. With an increase in the domestic price level, -domestic goods become costlier than foreign goods. Therefore, in an open economy, demand for imports increases. The increase in imports leads to an increase in the demand for foreign currency. This results in the rise in the price of the foreign -currency, i.e., the exchange rate increases. This is the *first effect* of an increase in the money supply.
- **The interest effect** an increase in money supply causes a fall in the interest in country *A*, as postulated by the Keynesian theory of interest. The fall in the domestic rate of interest makes domestic capital flow out to country *B*. This leads to a further increase in the demand for *B*'s currency. This results in a further rise in the exchange rate. -Consequently, *B*'s currency appreciates and *A*'s currency depreciates.

The price and the interest effects together cause an excessive depreciation of *A*'s currency. This is called the overshooting effect of a large increase in money supply. Note that the interest effect of a rise in money supply depreciates the currency much faster than a normal price effect of an increase in the money supply.

What happens in country *B*?

Exactly the reverse happens in country *B*. Its currency appreciates significantly. *B*'s currency appreciates because of an increase in its demand in country *A*. Another and a more important effect of an increase in money supply in country *A* is high inflow of capital to country *B* owing to a fall in the interest rate in country *A*. As a result, the demand for *B*'s currency overshoots causing excessive appreciation of *B*'s currency.

What is the final result?

The excessive depreciation of *A*'s currency and excessive appreciation of *B*'s currency create the conditions for restoring the *exchange parity*. The increase in demand for bonds in country *B* leads to increase in bond prices. As a result, the interest rate in country *B* tends to fall. Consequently, the outflow of capital from country *A* to country *B*

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slows down. But if inflow of capital to country *B* continues, the interest rate will fall further. This process of adjustment continues until the outflow and inflow of capital reach the equilibrium point and interest rates in the two countries are equalized. At this level, the excessive depreciation of *A*'s currency and excessive appreciation of *B*'s currency is eliminated. The ultimate result is the restoration of the exchange rate to the ratio of their price levels (P_A/P_B) following the rise in money supply in country *A*.

5.4.2 Drawbacks of the Monetary Approach

The monetary approach to exchange rate determination has been criticized on the following grounds.

The monetary approach overemphasizes the effect of an increase in money supply and ignores the other factors that affect the foreign trade of a country, e.g., capacity to export and import, price-rise effect of money supply on the non-traded sectors, price and income elasticities of imports, etc.

It assumes that foreign bonds are perfect substitutes for domestic bonds. This is an unrealistic assumption. There are, however, other options open for foreign investment and outflow of capital.

The monetary approach postulates that variations in the exchange rate are a purely monetary phenomenon. There are, however, other international factors which affect the exchange rate. For example, the appreciation of the Indian currency in 2010–11 was caused by economic depression in the US in 2009–10.

The monetary approach fails to explain satisfactorily the exchange rate variations of the major currencies since 1973.

5.4.3 Empirical Test of the Monetary Approach

As regards the empirical validity of the monetary approach, the researches by various economists over time reveal that this approach was empirically justifiable prior to 1973, but not there after. In an important study, Frankel found that the monetary approach was strongly applicable to the hyperinflation conditions in Germany in the 1920s. Two other economists, Bilson and Dornbusch produced in their separate studies similar evidence for the 1970s. However, empirical studies carried out after 1970s rejected the validity of the monetary approach to exchange rate determination. For example, Frankel himself found in his study conducted in 1993 that an increase in money in Germany led to an appreciation rather than a depreciation of the German currency, the deutsche mark. This contradicted the monetary approach hypothesis that an increase in money supply depreciates the currency. However, some later studies carried out by MacDonald and Taylor, Razzak and Grennes and again by MacDonald found some evidence in support of the monetary approach. It may thus, be concluded that the monetary approach was applicable to economic conditions that prevailed prior to 1970s. Owing to changing international economic conditions and increasing interruption of international trade after the early 1970s, the applicability of the monetary approach to exchange rate determination became questionable.

Check Your Progress

6. What does the Keynesian theory of interest state?
7. How is a country affected by change in money supply?

5.5 PORTFOLIO BALANCE APPROACH TO EXCHANGE RATE DETERMINATION

In the preceding section, we discussed the monetary approach to exchange rate determination. Recall that the monetary approach takes into account the aggregate demand and aggregate supply of money in the determination of the exchange rate. In this section, we discuss yet another approach to exchange rate determination, known as portfolio balance approach and the asset market approach. Unlike the monetary approach, the portfolio balance approach limits the determination of the exchange rate to the demand for money and bonds as assets excluding money demand for transaction motive. This approach is regarded as a refinement of the monetary approach.

The portfolio balance approach postulates that the exchange rate between any two currencies is determined in the process of portfolio balancing by investors in the two countries, i.e., balancing their demand for and supply of financial assets. The objective of portfolio balancing is to maximize returns. Investors' decisions on balancing their portfolios determines the demand for money and bonds as assets which, in turn, determines the exchange rate. According to this approach, the financial assets which people hold to maximize their returns include the following:

- Domestic money and bonds
- Foreign money and bonds

Investors (both individuals and firms) hold a combination of domestic currency, domestic bonds, foreign currency, and foreign bonds that maximizes their returns. Since foreign bonds are imperfect substitutes for domestic bonds and the rate of return from these assets varies from country to country and from time to time, investors keep changing their portfolio. The change in portfolio affects the demand for assets and hence the interest rate. Interest rate works as an important factor in changing the demand for and supply of money. The change in money demand and supply leads to a change in the exchange rate. According to the portfolio balance approach, the exchange rate between any two currencies is determined at the equilibrium level of the demand for and supply of assets.

5.5.1 Portfolio Adjustment and the Exchange Rate

Let us now explain the mechanism of the portfolio balance approach. For this purpose let us recall our two-country model of country *A* and country *B*. Suppose the monetary authorities of country *A* increase the money supply and, as a result, the interest rate declines in the domestic market. Investors in country *A* will now adjust their portfolios. Since the interest rate in country *A* has declines, investors switch over to foreign bonds, i.e., the bonds of country *B*. As a result, the demand for *B*'s currency increases. Consequently, the currency of country *B* appreciates and that of country *A* depreciates. Appreciation of *B*'s currency increases import prices. Therefore, *A*'s imports from country *B* decrease and *A*'s exports increase. As a result, the trade surplus of country *A* increases. This trade surplus causes appreciation of *A*'s currency over time. In the process of appreciation and depreciation of currencies, the exchange rate gets adjusted to the rate at which the demands for domestic and foreign financial assets are in balance. This is how the exchange rate is determined under the portfolio balance approach.

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Although the portfolio balance approach shows how the exchange rate is determined in the long run, it has its own shortcomings. The most important drawback of this approach is that it only explains the variations and the process of exchange rate adjustment. It does not provide a complete, unified theory of exchange rate determination.

5.6 INTEREST RATE PARITY THEORY

This theory is a link between exchange rates and interest rates.

Proposition 1: The interest rates prevailing in two countries affect the exchange rate between the currencies of those countries. Interest rates in India and in the US, for example, will drive the exchange rate between dollar and rupee.

Proposition 2: In an efficient market, if the interest rates in two countries are different, the exchange rates between the two countries will move in such a way as to bring about parity in interest rates. This will offset the apparent interest rate differentials, thereby denying any arbitrage opportunity.

This implies that high interest rate in one country will be offset by depreciation of the currency of that country. If, for example, the interest rate in India is higher than that in the US, the Indian rupee will depreciate against the US dollar.

According to the interest rate parity theory, the forward rate would reflect the interest rate. In the absence of it, arbitrage opportunities would open up and a shrewd investor could make a lot of money. To understand further, one needs to understand arbitrage and then its operation in the field of international finance.

Arbitrage means the existence of two different prices in two markets for the same commodity. If this happens, investors would make money. Let us understand the same with an example.

Suppose a fruit cake costs ₹ 10 in Bakery A and ₹ 12 in Bakery B. We know a cake is eatable wherever it is brought or sold (assuming other things remain constant). One would buy 100 pieces of cake in Bakery A and sell 100 pieces of cake in Bakery B making a profit of ₹ 200 per day for no effort. The actions of buying and selling push up the demand for cakes in Bakery A and their supply in Bakery B. In line with the law of demand and supply, the price of cake goes up in Bakery A and it comes down in Bakery B. Over time, the two prices would catch up and arbitrage would dissolve. This is an example of arbitrage over space.

We could also have an arbitrage over time. If, for example, the time value of money is 6 per cent and a cake costs ₹ 10 today, it would have to cost ₹ 10.6, a year later. If we know that it would cost, say ₹ 11 a year later, we would borrow ₹ 10 today at 6 per cent, buy a cake, sell it a year later at ₹ 11. Then we would pay the interest and repay the principal amounting to ₹ 10.60 and pocket the difference of ₹ 0.40. However, if one knew that it would cost less, say ₹ 10.40 a year later, it would be advisable to sell cakes today at ₹ 10, invest the proceeds at 6 per cent and get ₹ 10.60, a year later and buy cakes at ₹ 10.40. Thus, ₹ 0.20 would be earned in the bargain.

‘Arbitrage over space’ in forex refers to the price of currency in two countries. ‘Arbitrage over time’ refers to the prices in the two markets, spot and forward. One can identify arbitrage opportunities in either of the following two ways:

- (i) Compute the ideal forward price (theoretical price) and compare it with the existent forward price (actual forward rate). If the two are not equal, there could be an arbitrage opportunity.
- (ii) Compute the ideal home country interest rate (theoretical interest rate) for the given forward rate and compare it with the actual home country rate (actual interest rate). If the two are not equal, there could be an arbitrage opportunity.

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5.7 INTERNATIONAL FISHER EFFECT

Irving Fisher, an American economist, argued that over time, money interest rates change to reflect changes in the anticipated inflation rates. In other words, this theory states that changes in the anticipated inflation produce corresponding changes in the rate of interest. While some authors have provided statistical evidence to negate this theory, there is a consensus that Fisher's theory provides a useful rule of thumb. If the inflation rate is likely to change, it is a fairly good bet that interest rates will also change.

The rationale is extended to substantiate a view that international differences in the money interest rates also reflect differences in the anticipated inflation rates. Some countries experience a higher interest rate than their trading partners (interest rate in Germany is less than that in India; while in the US, interest rate is lower than even in Germany). The latter countries expect that they would experience depreciation in their currencies. Countries with high rates of inflation will generally have high nominal rates of interest too. This at least partially serves to allow investors to obtain a high enough 'real rate' of return, where inflation is relatively high.

The International Fisher Effect suggests the following:

- Changes in interest rates reflect changes in anticipated inflation rates and interest rate differentials provide an unbiased predictor of future changes in spot exchange rates.
- Currency of countries with relatively high interest rates is expected to depreciate because higher interest rates are considered necessary to compensate anticipated currency depreciation.
- Given the free movement of capital internationally, the real rate of return in different countries will equalize as a result of adjustments to spot exchange rates.

The International Fisher Effect reinforces the Interest Rate Parity and the Purchasing Power Parity theories by highlighting the inflation element in nominal interest rates.

Fisher formula

$$(1 + \text{Money rate}) = (1 + \text{Real rate}) \times (1 + \text{Inflation rate})$$

5.8 UNBIASED FORWARD RATE THEORY

Whenever there is a mention about the determination of exchange rate, unbiased expectation hypothesis or unbiased forward rate theory is sure to be mentioned. The

concept of the unbiased expectations hypothesis (UEH) argues that forward rate is an unbiased forecaster of the future spot rate. Thus, the forward rate at time t for maturity at time T must equal the market's expectation at time t for maturity at time T .

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$$F_{tT} = E_t(S_T)$$

In addition, the forward price is the expected spot price minus a risk premium to cover likely interest rate differentials.

$$F_{tT} = E_t(S_T) - \delta. \text{ Here, } \delta \text{ is the risk premium}$$

This hypothesis has been tested empirically in many economies but there has been no clear consensus about its existence. The concept is very famous in the theory of exchange rate determination. The hypothesis is said to function only when there exists no risk premium. The researchers in this field have contended that unbiased expectation hypothesis does not occur in actual trading. It is also called unbiased predictor.

We have seen that UEH does not give a satisfactory reply as to whether or not a forward rate may be a biased predictor of a future spot rate. In this respect, the following equation gives adequate answer to the aforementioned question.

$$S_T = b_0 + b_1 F_{tT} + b_2 I$$

S_T : represents the realized spot rate for the maturity date

F_{tT} : represents the forward rate

I : represents any available information that affects the exchange rate

b_2 : is a statistically significant that represents the market's efficiency if all the information is not incorporated in the forward rate (inefficient market)

By studying historical data, one can conclude that in the majority of instances b_0 does not equal to zero and b_1 does not equal to 1, which means that the forward rate is actually a **biased predictor** of the future spot rate. Contrarily, both the b_0 and the b_1 have a negative values, demonstrating that there is a risk premium related to the forward rate.

5.9 FUTURE SPOT

A spot rate is a rate at which currencies are being traded for delivery on the same day.

Examples

1. A company ABC (Importer) purchased goods from a US-Based company (Exporter) worth USD 5 million. The spot selling rate of USD against Indian Currency is ₹61.25. The Indian Importer will ask his banker to sell the USD. The bank will charge the following sum of rupees.

$$\begin{aligned} \text{INR} &= \text{USD} * \text{CONVERSION RATE} \\ &= 50,00,000 * 61.25 \\ &= ₹30,62,50,000 \end{aligned}$$

2. RIL has to pay to a Japanese-based firm 3,00,000 Yen towards technology transfer. The spot rate for 100 Yen = ₹63.00 RIL will ask its bankers to purchase Yen. The bank will charge the following sum of rupees.

$$\text{INR} = 3,00,000 / 100 * 63 = 1,89,000$$

Check Your Progress

8. What does the portfolio balance approach state?
9. What does the interest rate parity theory state?
10. What was Irving Fisher's view on interest rate change and inflation?

Spot market

The spot market or cash market is a public financial market, in which financial instruments or commodities are traded for immediate delivery. A spot market can be:

- (a) An organized market
- (b) An exchange
- (c) OTC

Currency arbitrage in spot market: With fast development in the telecommunication system, rates are expected to be uniform in different foreign exchange markets. Nevertheless, inconsistency exists at times. The arbitrageurs take advantage of the inconsistency and garner profits by buying and selling currencies. They buy a particular currency at cheaper rate in one market and sell it at a higher rate in the other. This process is known as currency arbitrage. The process influences the demand for, and supply of, the particular currency in the two markets which leads ultimately to removal of inconsistency in the value of currencies in two markets.

For example;

1 GBP = \$ 1.5921 in New York

1 GBP = \$ 1.5910 in London

The arbitrageurs will buy dollar in New York and sell it in London making a profit of \$.0011 GBP.

Speculation in the spot market: Speculation in the spot market occurs when the speculator anticipates a change in the value of a currency, especially an appreciation in the value of foreign currency. Suppose the exchange rate today is ₹61.25/\$; the speculator anticipates this rate to become ₹62/\$ within the following three months. Under these circumstances, he will buy USD 1,000 for ₹61,250 and hold the amount for three months, although he is not committed to this particular time horizon. When the target exchange rate is reached, he will sell USD 1000 at the new exchange rate, that is, at ₹62/\$ and earn a profit of ₹ 62,000 – ₹ 61,250 = 750.

5.10 METHODS OF FORECASTING EXCHANGE RATES

Forecasting exchange rates is possible but difficult to do. The factors that influence exchange rates are numerous and they act in an extremely complex, interactive and proactive manner. Moreover, those who participate in the market and actually move the exchange rates do not always have the theoretical and statistical equipment or the inclination for an in-depth analysis that theorists often attribute to them.

Recent experience with exchange rates suggests that the following forces should shape one's forecasts about exchange rates:

- (i) Expectations about future money supplies: If there is probability of rapid growth in money supply, the nation's currency will suffer a decline in its value.
- (ii) Expectations about governmental policies: If there is heavy taxation or confiscation of private assets, there will be a flight of foreign currency from that country and the domestic currency's value will decline. This factor is important as the flow of funds are now a more potential force in determining currency rates than

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fundamental economic exchange controls. Preventing the conversion of one currency into other currencies will lead to a similar outcome. For instance, once the French President promised sweeping egalitarian reforms in his election campaign. The value of the French franc fell from 4.2 to 5 and later to 5.6 to a US\$.

- (iii) Reactions to official exchange market intervention: If speculators believe that the officials have the will and resolve to stabilize the exchange rate in question, they will act in a way to stabilize it themselves. But if the announcement or evidence of official defense of a weak currency looks like last minute desperation, it may exacerbate the pressure on that currency.

Exporters can also subscribe to forecasting services that prove to be either long-term predictions of general trends or short-term trading advice. Two such services are Rothschild in London and Citibank in New York. Such redemption is usually on a first come first serve basis.

A bondholder wishing to redeem his entire holding or a portion thereof would be required to give notice of his request for early redemption to the Registrars by 1 November of the concerned calendar year.

Requests for early redemption by an individual are considered only if the bonds have been held by him at least for one year from the date of allotment of the bonds/transfer of bonds in his name as the case maybe.

5.11 SUMMING UP

- The exchange rate is the price of one currency in terms of another, or the rate of exchange is the rate at which one currency is exchanged for another. The rate of exchange is a price, like all other prices under free market conditions. It is determined by market forces, i.e., the demand for and supply of foreign exchange.
- The demand curve for foreign exchange is derived on the basis of the law of demand the higher the exchange rate, the lower the demand for foreign currency, and vice versa. Demand for foreign exchange arises from the demand for foreign goods, services, and securities.
- Supply of foreign exchange, comes from the central banks of the country and foreign-exchange dealers. The derivation of the supply curve for foreign exchange is the reverse process of deriving the demand curve for foreign exchange. When exchange rate is high, supply of foreign exchange is high and vice versa.
- The purchasing power parity theory (PPP) of exchange rate determination states that the exchange rate between any two currencies equals the ratio of their price levels. The PPP theory has two versions – absolute purchasing power parity theory and relative purchasing power parity theory.
- The monetary approach to exchange rate determination combines the purchasing power parity theory with two other theories, viz., the neo-classical quantity theory of money and the Keynesian theory of interest, to explain the determination of the exchange rate.
- The portfolio balance approach postulates that the exchange rate between any two currencies is determined in the process of portfolio balancing by investors in the two countries, i.e., balancing their demand for and supply of financial assets.

Check Your Progress

11. When does speculation take place in the spot market?
12. What is currency arbitrage?

- The interest rate parity theory Interest Rate Parity Theory is a link between exchange rates and interest rates.
- According to the interest rate parity theory, the forward rate would reflect the interest rate. In the absence of it, arbitrage opportunities would open up and a shrewd investor could make a lot of money.
- Irving Fisher, an American economist, argued that over time, money interest rates change to reflect changes in the anticipated inflation rates. In other words, this theory states that changes in the anticipated inflation produce corresponding changes in the rate of interest.
- The concept of the unbiased expectations hypothesis (UEH) argues that forward rate is an unbiased forecaster of the future spot rate.

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5.12 KEY TERMS

- **Arbitrage over space:** In terms of foreign exchange it refers to the price of currency in two countries.
- **Arbitrage over time:** In terms of foreign exchange it refers to the prices in the two markets, spot and forward.
- **Currency arbitrage:** A forex strategy in which a currency trader takes advantage of different spreads offered by brokers for a particular currency pair by making trades.
- **Spot rate:** It is the price quoted for immediate settlement on a commodity, a security or a currency.

5.13 ANSWERS TO ‘CHECK YOUR PROGRESS’

1. Supply of foreign exchange arises from the exports of goods and capital because importers demand currency of the exporting country for making payments. In fact, the supply of foreign exchange arises from the demand for it. When a country demands a foreign currency, it supplies its own currency to purchase the foreign currency. In the process, it supplies its own currency.
2. Two reasons for the fluctuation of exchange rate are:
 - (i) An increase in domestic prices owing to, say, a rise in the cost of production (foreign prices and cost remaining the same), it causes an increase in the demand for foreign goods, and hence, an increase in the demand for foreign exchange. Consequently, the foreign exchange demand curve shifts upward causing a rise in the exchange rate. On the other hand, a fall in the demand for exports causes a leftward shift in the supply of the national currency. The ultimate result of the shifts in demand and supply curves is a change in the exchange rate.
 - (ii) A rise in the real income of a country, other factors remaining the same, causes an increase in imports if imports are income elastic. An increase in imports causes an increase in the demand for foreign currency causing a rise in the exchange rate. The opposite happens when the real income of a country decreases.

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3. The absolute version of the PPP theory is based on the following assumptions:
 - There are no transportation costs
 - There are no tariffs on imports and subsidies on exports
 - There is free trade between nations
4. The PPP theory has been criticized for:
 - It ignores the effect of transportation costs which affect the final price paid by traders.
 - Many countries impose tariffs on imports and subsidize exports. These factors affect the price and, hence, the real purchasing power of the currency.
5. The relative purchasing power parity theory, a modified version of its absolute version, states that the relative change in the exchange rate over time is proportional to the change in the relative price level over a period of time.
6. According to the Keynesian theory of interest, the rate of interest in a country is determined by the aggregate demand for and the aggregate supply of money.
7. The change in money supply in country brings about two kinds of changes in its economy, viz., (i) change in the price level, and (ii) change in the interest rate.
8. The portfolio balance approach postulates that the exchange rate between any two currencies is determined in the process of portfolio balancing by investors in the two countries, i.e., balancing their demand for and supply of financial assets. The objective of portfolio balancing is to maximize returns.
9. The IPR theory states interest rate differentials between two different currencies will be reflected in the premium or discount for the forward exchange rate on the foreign currency if there is no arbitrage - the activity of buying shares or currency in one financial market and selling it at a profit in another.
10. According to American economist Irving Fisher, over time money interest rates change to reflect changes in the anticipated inflation rates. In other words, this theory states that changes in the anticipated inflation produce corresponding changes in the rate of interest.
11. Speculation in the spot market occurs when the speculator anticipates a change in the value of a currency, especially an appreciation in the value of foreign currency.
12. With fast development in the telecommunication system, rates are expected to be uniform in different foreign exchange markets. Nevertheless, inconsistency exists at times. The arbitrageurs take advantage of the inconsistency and garner profits by buying and selling currencies. They buy a particular currency at a cheaper rate in one market and sell it at a higher rate in the other. This process is known as currency arbitrage.

5.14 QUESTIONS AND EXERCISES

Short-Answer Questions

1. How are the demand and supply curves for foreign exchange derived?
2. What are the causes of exchange rate fluctuation?

3. Why has market theory been criticized?
4. How does a change in the interest rate lead to an overshooting of exchange rate?
5. What are the criticisms against the market theory and purchasing power parity theory?
6. What was Fisher's argument?
7. Write a critical note on interest rate parity theory.
8. Why is the unbiased forward rate theory important?

Long-Answer Questions

1. Explain the market theory of exchange rate determination. Does this theory explain fully the determination of the exchange rate?
2. What are the factors that cause variations in the exchange rate?
3. Explain the purchasing power parity theory of exchange rate determination. What are the shortcomings of this theory?
4. What are the absolute and relative versions of the purchasing power parity theory? What useful purpose does this theory serve?
5. Explain the monetary approach to exchange rate determination. How is this approach different from the purchasing power parity theory?
6. Explain the portfolio-balance approach to the determination of exchange rate. How is this approach different from the monetary approach? Which of these approaches in your opinion explains the exchange rate determination more satisfactorily?
7. How does change in money supply affect the exchange rate?

5.15 REFERENCES AND SUGGESTED READINGS

- Rajwade, A. V. 1995. *Foreign Exchange, International Finance and Risk Management*, New Delhi: Academy of Business Studies.
- Apte, P. G. 2010. *International Financial Management*. Noida: Tata McGraw-Hill.
- Bhalla, V. K. & Shivaramu, S. 1996. *International Business: Environment and Management*. New Delhi: Anmol.
- Baker James C. 1998. *International Finance: Management, Market and Institutions*. New Jersey: Prentice Hall.
- Haskin Mark E. 1996. *International Financial Reporting and Analysis*, Chicago: Irwin.

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UNIT 6 NATURE AND MEASUREMENT OF EXPOSURE AND MIX

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Structure

- 6.0 Introduction
- 6.1 Objectives
- 6.2 Defining Foreign Exchange Exposure and Risk
- 6.3 Economic Exposure Risk
- 6.4 Transactions Exposure
- 6.5 Operating Exposure
- 6.6 Translation Exposure
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 - 6.7.4 Hedging in Currency Future Markets
- 6.8 Summing Up
- 6.9 Key Terms
- 6.10 Answers to 'Check Your Progress'
- 6.11 Questions and Exercises
- 6.12 References and Suggested Readings

6.0 INTRODUCTION

With market liberalization and rapid technological advancement, finance managers in corporate houses are exposed to enhanced risk. Volatile political and economic conditions keep the exchange rate fluctuating, which is again a concern for the company treasurers. It is primarily due to significant increase in international capital flows and exposure to different currencies. An international firm deals in foreign currency. It expects to receive or make payment in the foreign currency. The exchange rate between the firm's domestic currency and the foreign currency may rise or fall by the time the firm receives or pays the cash flows in the foreign currency. This exposes the firm to risks associated with the foreign exchange. This unit will give a brief review on risk and exposures in the foreign exchange market and a detail distinction of various kinds of exposures with examples. It will also analyse hedging strategies.

6.1 OBJECTIVES

After going through this unit, you will be able to:

- Understand how the foreign exchange market operates
- Explain the relationship between interest rates, inflation rates and exchange rates
- Describe the various risk exposures a business faces
- Analyse on the techniques that can be used to hedge the foreign exchange risk

6.2 DEFINING FOREIGN EXCHANGE EXPOSURE AND RISK

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Foreign exchange exposure is the sensitivity of the real domestic currency value of assets, liabilities, or operating incomes to unanticipated changes in exchange rates. It can also be defined as a measure of the potential for firm's profitability, net cash flow and market value to change because of a change in exchange rates. A crucial task of the financial manager is to measure foreign exchange exposure and to manage it so as to maximize the profitability, net cash flow and market value of the company.

Adler and Dumas have defined 'exposure as the sensitivity of changes in the real domestic currency value of assets, liabilities or operating incomes due to unanticipated change in exchange rates'. Exposure measures the extent to which the value of goods in terms of domestic currency is changed due to unanticipated changes in exchange rate. Exposure exists on both domestic and foreign assets.

Exposure can be measured with the slope of the regression line between value of assets and liabilities and unanticipated changes in the exchange rate.

Let the value of assets and liabilities be denoted by ΔVAL and the unanticipated change in the exchange rate by ΔER . As per the regression, the line can be denoted as:

$$\Delta VAL = \alpha + \beta \Delta ER + e_t$$

where ΔVAL is the change in the value of asset or a liability, ΔER is the change in exchange rate, e_t is error term, α is intercept and β is the sensitivity of change in the value of assets or liabilities in response to change in the value of exchange rate.

Foreign exchange risk is the risk that the domestic currency value of cash flows, denominated in foreign currency, may change because of the variation in the foreign exchange rate. There would not be any foreign exchange risk if the exchange rates were fixed. Thus, the exchange risk may be defined as the variability of the firm's value resulting from the unanticipated exchange rate changes. Foreign exchange risk is measured by the variance of the domestic currency value of assets, liabilities, or operating income that is attributable to unanticipated changes in exchange rates.

There are two broad types of foreign exchange exposures:

- Economic exposure
- Accounting exposure or Translation exposure

Economic exposure has been further divided into:

- Transaction exposure
- Operating exposure

6.3 ECONOMIC EXPOSURE RISK

Change in the value of a company that accompanies an unanticipated change in exchange rates is called economic exposure risk. Of all the three exposures, economic exposure is the most important as it has an impact on the valuation of a firm. For example, a Japanese company imports children's toys from India. The same product is also available from China but it is costly. If the rupee appreciates against the yen and the Chinese currency

Check Your Progress

1. What is foreign exchange exposure?
2. What is foreign exchange risk?

decreases against the yen, Japan will prefer to import the toys from China as it will be cheaper for Japan.

Since economic exposure comes from unanticipated changes, its measurement is not as precise as those of transaction and translation exposures. Shapiro has classified economic exposure into two components: transaction exposure and operating exposure.

Since transaction exposure is already discussed, we will understand the operating exposure.

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6.4 TRANSACTIONS EXPOSURE

Whenever a foreign currency is transacted, there will be certain risks involved at the time of entering into transaction and at the time of realization of the cash of the transaction due to the difference in time period. This is due to the exchange rate movement that resulted into change in the domestic currency value of the transaction. This change in the value of transaction results in the gains or losses which involve definite movement. For example, let there be a deal for an export of T-shirts to an importer in the US. If the exporter quotes the price of a T-shirt as ₹ 250/ per piece and \$1 US = ₹ 62, it will cost the exporter \$4.03. By the time payment arrives, \$1 US = ₹ 60. As a result, the exporter will get ₹ 241.80/ per piece. So, the exporter is at a loss of ₹ 8.20 per piece. If the order was of 1000 pieces, the exporter would bear a total loss of ₹ (1000×8.20) = 8,200.

Various types of transactions that contribute to transaction exposure are as follows:

- Accounts payable in foreign currencies
- Accounts receivable in foreign currencies
- Non-recorded commitments to pay in foreign currency
- Non-recorded commitments to accept payments in a foreign currency
- Debt payments to be made in foreign currency
- Commitments to accept loan-re-payments in foreign currency
- Anticipated payments from foreign subsidiaries
- Unperformed forward exchange contracts

Techniques of Managing Transaction Exposure

Transaction exposure arises due to unpredictable movement of exchange rate and the open positions in assets or liabilities or both. Therefore, hedging involves entering into a financial counter-transaction to offset the risk associated with long or short unhedged positions in a foreign currency at a future point in time. An MNC can hedge its transaction exposure using the following hedging techniques:

- Forward contract
- Money market hedge
- Future contract
- Currency option hedge
- Currency invoicing
- Exposure netting
- Currency risk sharing

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An MNC will compare the cash flow that would be expected from each hedging technique before determining which technique to apply. As per the basic rule of hedging, the payables in a currency in the future should to be hedged with buying in the same currency in the forward, whereas, receivables in a currency in the future should be hedged with selling the same currency in the forward.

• Hedging with forward contract

Consider that an importer imports a machine worth \$1,00,000 and the contract is already. However, machine is to arrive after a month and the payment is to be made only at the time of arrival of the machine. At the time of the closing of the contract, the exchange rate is \$1= ₹ 62. Since the machine is to arrive after 1 month, therefore the exchange rate is expected to change. The market expectations are reflected in the forward rate of dollar. The importer also makes expectations of its own and expects that the exchange rate would move to \$1= ₹ 64 and believes that if the transaction is not hedged he will have to pay ₹ 2 extra per dollar. To hedge transaction, the importer checks the forward market and finds that in the 1 month forward market, the dollar was selling at ₹ 63.70/\$. The importer purchases \$1,00,000 as the dollar was comparatively cheaper in the forward market than importer's own perception. In this way, the importer ensures the amount to be paid and saves ₹ 0.30/\$ as compared to its perception. The cost of hedging is the premium on dollar: $[(63.70 - 62)/62 \times 12/1 \times 100]/(12/1) \times 100 = 32.90\%$ annualized.

• Money market hedge

Money market hedge involves mixing of foreign exchange and money markets to hedge at the minimum cost. It involves taking advantage of the disequilibrium between money and foreign exchange market. The importer has two possibilities: to take advantage of interest rate differentials in the money markets and the premiums and discounts existing in the forward foreign exchange market.

- The importer buys the amount of dollars $[100,000/(1 + (1/12)(r^{\$}))]$ in the spot market, which when deposited in the US at the US interest rate grows to \$100,000 in 1 month so that the payable is paid.
- The importer buys \$100,000 in the forward market. Then, in order to make the payment in Indian rupees when the forward contract matures, the importer deposits that much amount of rupees in the bank at domestic interest rate which grow equal to the value of the forward contract. The importer pays the forward contract through which the importer had purchased dollars with this investment.

Out of the two possibilities, the importer compares and chooses the one that involves smaller payment.

• Hedging with future

Future is a standardized instrument. Therefore, while hedging with futures one must ensure that the hedge will not exactly match the transaction in size and maturity. The importer has a transaction worth \$100,000 and the size of dollar future is also \$100,000. The importer will buy one future that will mature on a particular date and the currency will be available with the hedger at the time of maturity only. The maturity date of the future may not be suitable to the hedger because the date of payment to the supplier is fixed in the contract and may not match with the maturity of the future.

Hedging with future is advantageous if the amount involved in the exposure is large. The rule is that if the transaction leaves the firm long on a particular currency, then it sells the future contract, and if the transaction leaves the firm short it buys the future.

The major differences between the forward market hedge and future hedge are as follows:

- Forward contracts are executed by banks whereas future contracts are executed by security and brokerage houses of future exchange.
- Forward contracts are tailor made whereas future contracts are standardized transactions.
- Price paid in future exchange is determined by the forces of demand and supply, whereas the forward market quotations are quoted by banks and reflects banker's perception of the future price.
- Future transactions are marked to market.
- Forward contracts are bilateral between two parties whereas the buyer and the sellers of future do not enter into direct contract. The contract is done through the future exchange.

• Hedging with options

Currency options give the individual the right to exercise a buy or sell transaction of a currency and the purchaser of the option is not obliged to exercise the right that he has purchased after paying a premium. In case of hedging with options, the option is exercised and the hedge comes into operation if the prices surpass the expectations. This type of hedging is usually resorted when non-performance of contract is expected. In India, cross-currency option hedges are permitted. In this kind of hedge, one is not allowed to hedge the currency of invoicing with domestic currency but a foreign currency is hedged with another foreign currency.

• Hedging through currency invoicing

During the negotiation of an import contract, if an importer of a country with weak currency get goods invoiced in domestic currency and the exporter invoice the goods in strong currency, the risk shifts from one company to the other.

• Exposure netting

The net of payables and receivables is termed as netting. The exposure is reduced, if it is possible to net the payables and receivables. In this case, the cost of hedge is also reduced.

• Currency risk sharing

An agreement to share currency risk between an international seller and buyer to spread out the impact of currency rate changes is called currency risk sharing. This is done by developing customized hedge in which the base price is adjusted to reflect certain exchange rates.

6.5 OPERATING EXPOSURE

Operating exposure has an impact on the firm's future operating costs and cash flows. Since the firm is valued as a going concern entity, its future revenues and costs are to be

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Check Your Progress

3. When does transaction exposure occur?
4. What are the hedging techniques to manage transaction exposure?
5. What does money market hedge mean?
6. What is the advantage of hedging with options?

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affected by the exchange rate changes. If the firm succeeds in passing on the impact of higher input costs fully by increasing the selling price, it does not have any operating risk exposure as its operating future cash flows are likely to remain unaffected. In addition to supply and demand elasticities, the firm's ability to shift production and sourcing of inputs is another major factor affecting operating risk exposure.

Managing economic exposure

The objective of operating exposure management is to predict unexpected movements in exchange rates and find out the effect of this movement on the firm's future cash flows. A strategic policy is to be designed to meet the adverse effects on future cash flows. The policies can be any one of the following or a mix of these:

- Diversification
- Changing operating policies
- Changing financing policies

• Diversification

An MNC may resort to diversification to hedge the operating risk. It would require forecasts on exchange rate, inflation rate and interest rates. Predicting these variables, the MNC can decide about the diversifying operations or financing sources or both.

Diversifying operations

Diversification provides flexibility in operations. If an MNC's operations are well diversified in currencies that do not move together, the risk is minimized. Management is pre-positioned to find the disequilibrium when it occurs and reacts competitively.

Diversifying financing

By adopting diverse financing sources, an MNC would be prepositioned to take the advantage of deviation from the International Fisher effect. If interest rate differentials do not equal the expected changes in exchange rates, opportunities to lower a firm's cost of capital will exist.

• Changing operating policies

Operating exposure can be managed by changing the operating policies. The three operating policies which are normally employed are:

- Using leads and lags in payments
 - Sharing currency risk with customer
 - Using a re-invoicing centre
- (i) ***Using leads and lags in payments:*** A firm has a payable in hard currency, and if depreciation is expected then the payables are to be lead and receivables are to be lagged. In case of soft currencies, converse is true. This applies to all payables and receivables such as debt payment and lending. Leading and lagging are largely feasible between subsidiaries and parent.
- (ii) ***Sharing currency risk with customers:*** If the firms have a continuous long-term buyer and supplier relationship, then such a risk sharing may be agreed upon

between them. The risk sharing clauses can be introduced in trading agreements. These clauses are intended to smooth out the impact on both parties of volatile exchange rate movements.

- (iii) **Re-invoicing centres:** It is a separate corporate subsidiary that manages transaction exposures due to intra-company trade. The manufacturer subsidiary sells the output to distribution affiliates that by selling to re-invoicing centre, which in turn resells the goods to the distribution affiliate. Re-invoicing centre can only handle paperwork and has no inventory.

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6.6 TRANSLATION EXPOSURE

When an MNC creates an asset or borrows a loan from any other country, the value will depend on the movement in the exchange rate. When the foreign currency assets or liabilities have to be converted into home currency for closing the books for the year, there may be differences in the exchange rates of the currencies. For example, an Indian corporate has taken a loan from a bank in the US to import plant and machinery worth US \$10 million. When the import materialized, the exchange rate was ₹ 62. The imported plant and machinery in the books of the corporate would be shown as ₹ 62 × \$10 million = ₹ 62 crore and loan at ₹ 62 crore.

Assuming no change in the exchange rate, the corporate at the time of preparation of final accounts will provide depreciation (25 per cent) of ₹ 15.50 crore on the book value of ₹ 62 crore. If the dollar exchange rate appreciates to ₹ 63, the book value of plant and machinery will change to ₹ 63 crore. Depreciation will increase to ₹ 15.75 crore (₹ 63 crore × 0.25), and the loan amount will also be revised upwards to ₹ 63 crore. Thus, there is a translation loss of ₹ 1 crore due to increased value of loan. Besides, the higher book value of the plant and machinery causes higher depreciation, reducing the net profit.

6.6.1 Managing Translation Exposure

Since subsidiaries operate in foreign countries, their assets and liabilities are denominated in foreign currencies and these assets and liabilities are to be translated into domestic currency for consolidation into parent's balance sheet for the purpose of annual report. The procedure to consolidate the balance sheet is regulated by Accounting Standard Boards, but there are four methods of translation of balance sheet.

- Monetary and non-monetary methods
- Temporal methods
- Current and non-current methods
- Current rate method

- (i) **Monetary and non-monetary methods:** This method helps in differentiating between monetary assets and liabilities, for example, receivables and payables and non-monetary assets and liabilities, for example, physical assets and liabilities. Monetary items such as cash, accounts payables, accounts receivables are translated at the current exchange rate and the non-monetary items like inventory, fixed assets, long-term investments are translated at historical rates.

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Income statement items are translated at an average exchange rate during the period except current receivables and payables related to non-monetary asset liabilities, i.e. depreciation expenses and cost of goods sold are translated at the same rate as the corresponding balance sheet items. The advantage of this method is that foreign non-monetary assets are carried at their original cost in parent's consolidated statement. This approach is consistent with the practice of original cost treatment of domestic assets of the parent firm.

- (ii) **Temporal method:** In this method, inventory is translated at the historical exchange rate just like monetary and non-monetary methods, but it is also translated at the current rate if these are shown in the balance sheet at market value.
- (iii) **Current and non-current methods:** In this method, all current assets and liabilities are translated into domestic currency at the current exchange rate. Each non-current item is translated at the historical exchange rate. Thus, in this method, the cash and working capital of a subsidiary after appreciation of the parent's currency will result in translation losses and its appreciation will provide translation profits.
- (iv) **Current rate method:** In this method, all balance-sheet and income statement items are translated at the current rate except equity. If a firm's foreign currency-denominated assets are more than its liabilities, a devaluation must result in a loss and a revaluation in a gain.

6.7 HEDGING STRATEGIES

Hedging refers to a technique to transfer the risk. It is used to avoid any worsening of an exchange position; an importer can hedge an international transaction by trading in the foreign exchange market. By entering the foreign exchange market, one can eliminate the uncertainty regarding the price that would have to be paid to acquire the needed foreign currency. The objective of hedging or risk management is to transfer risk from one individual or corporation to another individual or corporation. The person off-loading the risk is the hedger; the person taking on the risk is the speculator or trader. The hedger is concerned with adverse movements in security prices or with increase in volatility, which increase the overall riskiness of his position.

For example: If an individual has long position (net assets position) in cash market securities, he will be concerned about the prices of those securities falling and will want to protect against this possibility. Alternatively, if an individual has a short position (net liability position) in cash market securities, he will be concerned about rising prices and will want to protect against this possibility. In order to hedge successfully and so transfer all risk, the hedger will have to select a suitable hedging instrument among the give below.

Hedging Instruments

(i) Forward exchange cover

Forward exchange cover is created to hedge foreign currency loans taken by companies. RBI has permitted authorized dealer, who can book forward cover on roll-over basis as necessitated by the maturity dates of the underlying transaction market condition and the need to reduce costs to the customer. Where the foreign currency amount to be

Check Your Progress

7. What are the methods of balance sheet translation?
8. What is economic exposure risk?
9. What is the significance of managing operating exposure?
10. What are the policies of managing operating exposure?

covered cannot be precisely quantified, as in the case of interest payable on loans contracted on floating rate basis, authorized dealers will book forward contracts for an amount arrived at on the basis of reasonable estimate. Small amounts of short falls or excess will be purchased or sold on spot basis.

(ii) Forward interest rates cover

It offers an opportunity to lock in for a future date and interest rates in a volatile rate environment. This enables borrowers to fix interest rates on existing floating rate debt or set a rate today for a debt to be taken in future. The difference between actual rate on the date of the interest roll over and contracted rate is settled between the client and the bank. Borrowers use an interest rate forward to protect themselves from a rise in interest rates.

For example: RIL enters into an agreement at 6.50 per cent, then on the settlement date if the LIBOR is 7.40 per cent the bank will pay to the company this 0.90 per cent differential. On the other hand, if the LIBOR is 6.0 per cent, then the company will have to pay to the Bank the differential of 0.50 per cent. In an agreement of this sort, the settlement is always made by payment of the differential amount. There is no commitment by either party to lend or borrow the specified amount.

6.7.1 Currency Swap

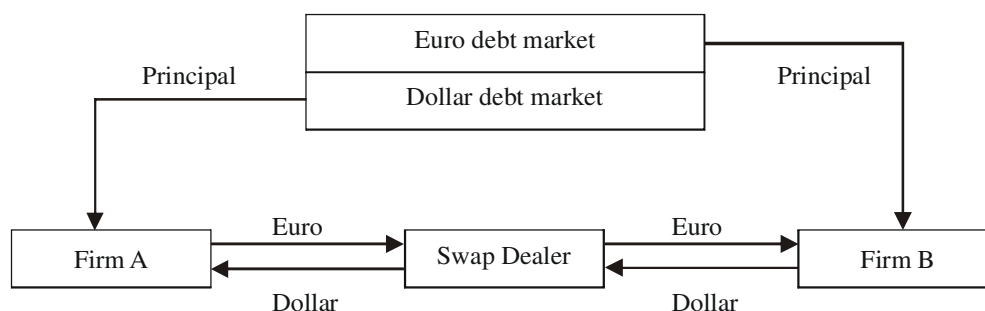
A currency swap is an agreement to exchange fixed or floating rate payments, in one currency for fixed or floating payments in a second currency plus an exchange of the principal currency amounts. A currency swap may include the following three stages:

- (i) A spot exchange of principal, which forms part of the swap agreement as a similar effect can be obtained by using the spot foreign exchange market.
- (ii) Re-exchange of principal on maturity.
- (iii) Continuity exchange of interest payments during the term of the swap, which represents a series of forward foreign exchange contracts during the term of the swap contract.

For example: Firm 'A' can borrow EURO at a fixed rate of 8 per cent or it can borrow USD at a floating rate of 1 year LIBOR. Firm 'B' can borrow at a fixed rate of 9.2 per cent and can borrow USD at 1 year LIBOR. If Firm 'B' needs fixed rate EURO, it will approach the swap dealer, provided Firm 'A' needs floating rate USD.

Step 1: Firm A borrows Euro at 8.0% interest rate and Firm B borrows US dollar at LIBOR.

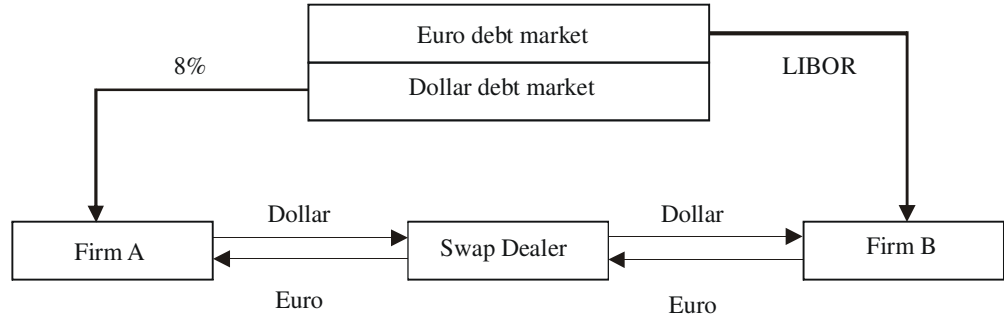
Step 2: The two firms exchange the borrowed currencies with the help of swap dealer. After the exchange, Firm A will have US dollar and Firm B will have Euro.



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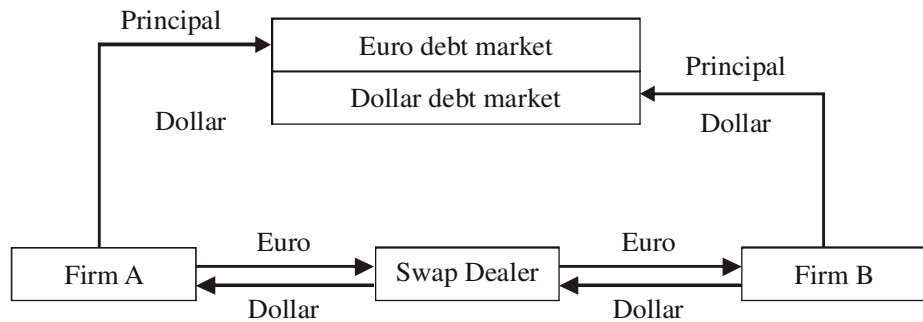
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Step 3:



Interest payment will flow. Firm A will pay LIBOR on US dollar that will reach the US dollar market through the swap dealer and then through Firm B. Similarly, Firm B will pay a fixed rate of interest which will flow to the fixed rate Euro market through the swap dealer and through Firm A. Firm B will pay a fixed rate of interest to the swap dealer that will be more than 8.0% but less than 9.20%. The swap dealer will take its own commission and shall pay to Firm A.

Step 4: Two principals will be exchanged between two counter-parties. Firm A gets back Euro and repays it to the lender. Firm B gets back US dollar and repays it to the lender.



6.7.2 Interest Rate Swap

It is an arrangement whereby one party exchanges one set of interest rate payments for another. The most common arrangement is an exchange of fixed interest rate payment for another rate of over a period of time.

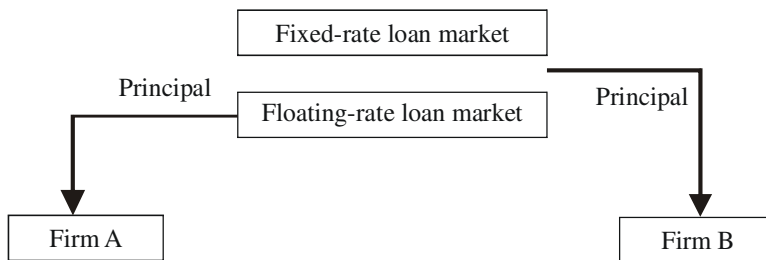
Features

- Principal value upon which the interest rate is to be applied
- Fixed interest rate to be exchanged for another
- Formula type of index is used to determine the flowing rate
- Frequency of payment is agreed upon
- Life time of swap

Example: Let firm A need a fixed rate loan, which is available at a rate of 10.50% to be computed half yearly but it has access to a cheaper rate fund available to it at LIBOR + 0.3%. Firm B needs floating rate funds for 6 months LIBOR flat but it has access to cheaper fixed rate funds available to it at a rate of 9.5%, to be computed half yearly.

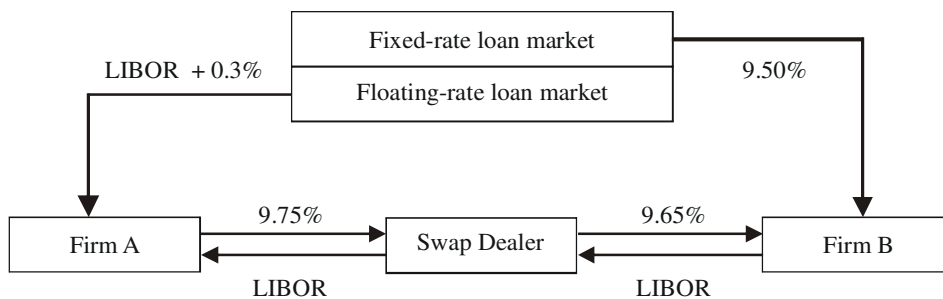
Both the principals are identical in size and maturity and in the same currency, the interest rate swap will occur in the following steps.

Step 1: If Firm A has access to floating rate loan market, it will borrow from floating rate market and Firm B having access to fixed loan market will borrow the fixed loan.

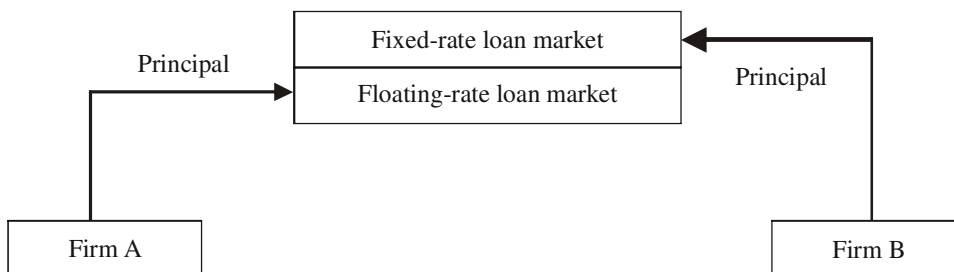


Step 2: Since both firms have not borrowed according to their needs, they approach a swap dealer. Firm A needs fixed rate loan, so the swap dealer asks Firm A to pay fixed rate interest to him as if Firm A has borrowed a fixed rate loan. The fixed rate of interest payable through the swap dealer is higher than what Firm B has to pay to the lender in the fixed rate loan market but lower than what Firm A has to pay to the lender, if it had borrowed from the fixed rate loan market. In exchange, the swap dealer pays Firm A the interest at 6 month LIBOR. Firm A pays LIBOR+0.3% to the lender on its floating rate borrowing.

The swap dealer asks Firm B to pay 6 month LIBOR as if it has borrowed floating rate loan. In exchange, the swap dealer pays Firm B fixed rate of interest which is higher than what Firm B has to pay to its lender. This is the interest rate that the swap dealer has received from Firm A minus its own commission.



Step 3: At maturity, the two firms repay the loan. Firm A repays the floating rate loan and Firm B repays the fixed rate loan.



Cost of Swap

While there is no exchange risk involved in swap transactions, there is a cost involved. The swap cost depends on the currency being in premium or discount in the forward

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market. A currency is said to be at premium against the other currency if it is costlier in the forward and it is said to be at a discount against the other currency, if it is cheaper in the forward.

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When a currency is at a premium against the other currency, then the currency will be costlier in the forward so in the event of swap, i.e. when the buying and selling transaction is undertaken then the swap cost will be favourable.

Suppose \$/Rupee quote in value on 1/9/2008 = 45.87 and
\$/Rupee quote in value on 31/10/2008 = 45.93

The currency is bought at 45.87 and sold at 45.93, so the swap cost will be received. Alternatively, when swap is reversed, that is selling and buying transactions take place, the swap cost is to be paid (see Table 6.1).

Table 6.1 Swap Cost

Types of Transaction	Currency Quote	
	At Premium	At Discount
Buying and Selling	Receive	Pay
Selling and Buying	Pay	Receive

The short-term source of finance is the credit market. In international trade, trade finance is provided in the form of the letter of credit (L/C). When a firm is dealing in foreign trade, it has to take finance from a bank that is of his country and send the documents across to the bank of the other party in another country. These documents ensure that the exporter will get the payment for the export of goods and it will encourage the exporter to ship the goods on time as per the commitment. As the exporter and the importer are in different countries and may not have even met face-to-face, there is a good chance that either the exporter does not get his payment on time and even if he gets, he may not honour his commitment of sending quality goods on time. But once both the parties enter into a documentation like L/C, draft, bill of lading, etc., they become legally bound to fulfil their commitments.

Various types of export finances often carry an interest rate subsidy and are offered directly to overseas importers or domestic exporters by the financing agencies. The different types of credits extended under export finance are as follows:

- **Buyer's credit:** The credit that is in favour of buyers.
- **Supplier's credit:** Credit in favour of domestic exporters who in turn extend credits in favour of their overseas clients.
- **General purpose lines of credit:** Credits in favour of overseas banks or FIs is also called Shopping Baskets.
- **Project lines of credit:** The line of credits extended in favour of the project sponsor.

Foreign trade documents help to reduce the risk of foreign exchange as they assure the amount and the time of payment.

Caps, Floors and Collars

- (i) **Cap:** It is a series of call options on interest rate covering a medium- to- long term floating rate liability. Purchase of a cap enables the borrowers to fix in advance a maximum borrowing rate for a specified amount and for a specified duration, while allowing him to avail benefit of a fall in rates. The buyer of cap pays a premium to the seller of cap.
- (ii) **Floor:** It is a put option on interest rate. Purchase of a floor enables a lender to fix in advance, a minimal rate of placing a specified amount for a specified duration, while allowing him an avail benefit of a rise in rates. The buyer of the floor pays the premium to the seller.
- (iii) **Collar:** It is a combination of a Cap and Floor. The purchaser of a collar buys a cap and simultaneously sells a Floor. A Collar has the effect of locking its purchase into a floating rate of interest that is bounded on both high side and the low side.

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6.7.3 Currency Futures and Currency Options

Currency future is a future contract to exchange one currency for another at a specified date in the future at a price that is fixed on the purchase date. Currency futures were first created in 1970 at the International Commercial Exchange in New York. But, it was came into use in 1975 after completely take off of Breton Woods System.

Currency options are basically rights given to the buyers of foreign currency to buy or sell a specific amount of foreign currency at a specific exchange rate (the strike price) till a specific date when the contract expires. Currency options may be entered either for a put or call. A put option gives the right to sell a foreign currency whereas a call option gives a right to buy foreign exchange. This depends upon the position that is required under a specific situation by the party entering into an option market. A put option is required when the party requires foreign exchange.

By buying a put option the party sells the domestic exchange to procure the right amount of foreign exchange a specified rate. The reverse is done, when payment is needed to the done by the party. A call option is entered so that foreign exchange can be bought by exchanging the domestic currency.

Leads, Lags and Netting

A firm having exposures to pay foreign currency can make payments in advance prior to due date called 'Leads' in order to take advantage of a lesser rate of foreign currency. In such cases, the firm should consider the interest loss on opportunity to deploy funds elsewhere. If the firm delays the payments over the due date to take advantage of the exchange fluctuation it is called 'Lags.' The technique used in this is to delay payment of weak currencies and bring forward payment of strong currencies.

Netting is a concept of setting up the net amounts owned or amounts as a result of trade within the firm, i.e., between MNC parent company and its subsidiaries. The basic idea behind netting is to transfer only net amounts, usually within a short period. Instead of making each payment—incurring transaction costs—the net position between the two companies can be ascertained say, every three months and one payment only to be made by the company which is in the net debtor position.

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Similarly, concept in line of netting is **matching receipts and payments**. The foreign exchange rate risk can be eliminated or reduced, if the company which is having exposure to receipts and payments in the same currency. The company can offset its payments against its receipts if it can plan properly. This can be managed by operating a bank account in overseas to offset the transactions.

6.7.4 Hedging in Currency Future Markets

Futures contracts are an effective means of managing risks. Using futures to offset or reduce existing risks is called hedging. Banks use interest rate futures to hedge the risk arising from their asset-liability mismatch. Banks have to fund long-term assets such as mortgage loans with short term liabilities such as savings and demand deposits. This gives rise to the asset-liability mismatch. Similarly, stock index futures are used by portfolio managers to manage the risk of their stock portfolios. Importers, exporters and multinational corporations use foreign currency futures to manage the foreign exchange risk.

Hedging with Futures

Hedging refers to a transaction on a futures exchange undertaken to reduce a pre-existing risk inherent in an underlying business activity. Depending on the risk being hedged and the construction of the hedge, futures hedges can be classified as follows.

Short hedge: A short hedge is used by a firm that expects to sell an asset in the future. The firm takes a short futures position to hedge the price of the asset.

Long hedge: A long hedge is used by a firm that expects to buy an asset in the future. The firm takes a long futures position to hedge the price of the asset.

Inventory hedge: An inventory hedge involves establishing a futures position to hedge an existing position in the cash market. Inventory hedges are generally established in commodity markets.

Anticipatory hedge: An anticipatory hedge involves establishing a futures position to hedge a cash position that may be taken in future. Anticipatory hedges are generally established in financial markets.

Micro hedge: A micro hedge is a futures position that is matched against a specific asset or liability item on the balance sheet (e.g., a company hedging a foreign currency loan to be repaid in the next six months).

Macro hedge: A macro hedge is a futures position designed to hedge the combined risk of many assets and liabilities (e.g., a multinational corporation using currency futures to hedge the currency risk of its net receipts/ payments, i.e., receipts minus payments of different currencies).

Strip hedge: A strip hedge involves establishing a series of futures contracts maturing at successively longer periods. Such a hedge is used to cover the risk of a sequence of payments such as those in a long-term swap arrangement.

Stack hedge: A stack hedge is also used to cover the risk of a sequence of payments over a long period of time. However, instead of entering into a number of contracts, the entire futures position is established or stacked in the front month. The initial position minus the portion of the hedge that is no longer needed is then rolled forward to the next period contract.

(i) Hedging with short-term interest rate futures

Interest rate futures are a useful way of hedging risk arising out of changes in interest rates. In particular, banks that face a mismatch between their interest-sensitive assets and liabilities can employ hedges constructed with interest rate futures. This is illustrated by the following example.

A customer approaches a bank for a fixed-rate loan of ₹10 lakh for nine months in the month of January. If the bank can raise a nine-month matching liability, there will be no mismatch in the interest rate sensitivity of its loan asset and funding liability. In this case, the bank can readily estimate its cost of funds and quote the price for the loan. However, if the bank can currently raise funds for a six-month period, the bank will have to refinance the loan at the end of six months at the interest rate prevailing at the expiry of six months. The bank faces the risk of rise in interest rates. To hedge this risk, the bank can create a short position in six-month interest rate futures. If interest rates rise after six months, the bank will gain on the futures contract to offset the rise in interest rate. Therefore, the bank can quote the price of the loan with certainty.

Assume that the bank has a cost of 4 per cent on its six month liability and the six month interest rate futures are quoted at 4.5 per cent. Based on these rates, the bank can estimate its expected cost of funds for the nine month loan. The bank is, however, still faced with the risk of rise in interest rates after six months. To hedge this risk, the bank can establish a short position in June interest-rate futures in January. The position will be established at 95.5 per cent (100% – 4.5%). If in June, the three-month rate rises to 5.0 per cent, the futures contract will be priced at 95 per cent (100% – 5%). Because, the bank has a short position, it will gain on the futures contract. This gain will precisely offset the bank's increase in its cost of funds over and above the 4.5 per cent rate it expected to prevail at the time it priced the bank loan and constructed the hedge. By hedging, the bank has given up the opportunity to make extra money if the interest rates actually fall in future. However, by hedging the bank has been able to lock in the cost of funds, to price the nine-month fixed-rate loan with certainty and lock in an acceptable profit.

(ii) Hedging with long-term interest rate futures

Hedging with interest rate futures is easy when the characteristics such as coupon and maturity of the hedged instrument and the hedging instrument match. Often the need arises to hedge an instrument very different from those underlying the futures contract. Change in the price these instruments depends on the shifts in the level of interest rates, changes in the shape of the yield curve, the maturity, and the coupon rate. A long maturity/low coupon bond will be much more sensitive to a given change in interest rates than a short maturity/high coupon bond. Where the characteristics of the instrument being hedged do not match the characteristics of the instrument underlying the futures contract, the hedge is called a cross hedge. The effectiveness of such a hedge depends on the gain or loss on both the spot and futures sides of the transaction.

The following example illustrates the effect of the maturity and coupon rate on hedging performance. On January 1, a portfolio manager expects that he will receive ₹ 1 million on April 1 to invest in highly rated corporate bonds paying an annual coupon of 8 per cent and having 10 years to maturity. The yield curve is flat and is assumed to remain so over the period from January 1 to April 1. The current yield on highly rated

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corporate bonds is 10 per cent and are priced at ₹ 87.71. To lock in a yield of 10 per cent in the event of interest rates falling, the portfolio manager decides to hedge with T-bond futures. The T-bond futures contract is written on a benchmark 20-year bond with a 6 per cent coupon rate and a futures yield of 8.5 per cent.

He buys 10 T-bond futures contract of ₹1 lakh each at a price of ₹ 76, 153. At the current bond price of ₹ 87.71, he would have bought 11,401 bonds for ₹ 1 million

Suppose that the yield on highly rated corporate bonds falls to 9 per cent by April 1. The price of the bond increases to ₹ 93.58, The loss per bond is ₹ 5.87 (₹ 93.58–₹ 87.71) and the total loss on 11,401 bonds is ₹ 66, 924. Assuming that the T-bond futures yield also falls by one per cent to 7.50 per cent, the futures price per contract will be ₹ 84, 587. The gain per contract will be ₹ 8,434 (₹ 84, 587–₹ 76, 153) and the total gain of the futures position will be ₹ 84, 340. The net change in wealth is ₹1 7, 416 (₹ 84, 340–66,924).

The example shows that the prices of the two instruments change by different amounts and a simple hedge of one rupee in the futures market for every rupee in the cash market does not achieve a zero change in net wealth.

For achieving such a result, it is necessary to adjust the futures position so that it has the same interest rate sensitivity as the cash market position being hedged. Two important techniques are available to make this adjustment. These are the Basis Point Model and the Price Sensitivity Model.

Portfolio immunization

The preceding examples illustrated how interest rate futures could be used to hedge the interest rate risk arising out of changes in a single interest rate. However, in the case of portfolios of bonds, different bonds are sensitive to variations in different interest rates. Banks, corporate treasury departments and bond portfolio managers are, therefore, interested in hedging not just against a single rate, but against shocks to the entire yield curve. Hedging whole yield curve risk is called immunization. To achieve immunization, interest rate futures are used in conjunction with other interest rate derivatives.

(iii) Hedging with stock index futures

Hedging with stock index futures involves finding the futures position so that such a position can be used to establish a combined stock and futures portfolio with the lowest possible risk. Stock index futures can also be used to alter the beta of an existing portfolio.

The futures position to be combined with the stock position depends on the minimum risk hedge ratio. This minimum risk hedge ratio, HR, is equal to:

$$HR = \frac{\rho_{CF} \sigma_C \sigma_F}{\sigma_F^2} = \frac{COV_{CF}}{\sigma_F^2}$$

Where,

ρ_{CF} = correlation between cash market stock portfolio and the futures

σ_C = standard deviation of returns of cash market stock portfolio

σ_F = standard deviation of returns of futures

σ_F^2 = variance of returns of futures

COV_{CF} = the covariance between cash market stock portfolio and the futures.

It is, however, easier to find the risk-minimizing hedge ratio by estimating the following regression:

$$C_t = \alpha + \beta_{RM} F_t + \varepsilon_t$$

where C_t = the returns on the cash market position in period t

F_t = the returns on the futures contract in period t

α = the constant regression parameter

β_{RM} = the slope regression parameter (beta) for the risk-minimizing hedge

ε = an error term with zero mean and standard deviation of 1.0

The estimated beta from this regression is the risk-minimizing hedge ratio because the estimated β_{RM} equals the sample covariance between the independent (F) and dependent (C) variables divided by the sample variance of the independent variable. The R^2 from this regression shows the percentage of risk in the cash position that is eliminated by holding the futures position.

The number of futures contracts to trade to minimize the risk is given by

$$\left(\frac{V_P}{V_F} \right) \beta_{RM}$$

Where V_P = size of the portfolio

V_F = size of the futures contract

Example

A portfolio manager has a portfolio worth ₹ 10 million at the end of December. The portfolio is invested in 50 stocks in the S&P CNX Nifty index. The portfolio manager plans to distribute the fund in March of the following year and wants to hedge against the decline in the value of the portfolio over the next three months with stock index futures. If he establishes a short position in the stock index futures, the value of the futures position will go up if the value of the stock portfolio goes down. The portfolio manager chooses to hedge the cash market portfolio with S&P CNX Nifty futures contract.

Based on the regression of cash market returns on the returns from the futures contract, the beta (β_{RM}) is estimated at 0.9. This indicates that each rupee of the cash market position should be hedged with ₹0.9 in the futures position. The size of a futures contract at the NSE is 50 times the index. The index value at the end of December is 5,000. Therefore, he would need to short 36 futures contracts as shown below.

$$\left(\frac{V_P}{V_F} \right) \beta_{RM} = \left(\frac{\text{₹}10,000,000}{(5,000)(50)} \right) 0.9 = 36$$

The index declines by 5 per cent by March. The stock portfolio declines by 4.5 (5 × 0.9) percent entailing a loss of ₹4,50,000. The futures contract quotes at 4,750 (5,000–5% of 5,000). Buying back 36 futures contracts at 4,750 each secures a gain of ₹4,50,000 [(5,000–4,750) × 36 × 50].

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By hedging, the net value of the portfolio is unaffected by the decline in the stock market. However, if the market had gone up, the futures hedge would have produced a loss that would have exactly offset the gain in the stock portfolio. By hedging, the portfolio manager has deliberately chosen to forego gains in the portfolio in order to avoid losses.

Altering the beta of a portfolio

The value of stock portfolios varies with changes in the market index. The change in the value of the stock portfolio depends on the beta of the portfolio determined using the capital asset pricing model (CAPM). Portfolio managers try to adjust the betas of their portfolio in anticipation of bull and bear markets. If the manager expects a bull market, he might increase the beta of the portfolio to take advantage of the expected rise in stock prices. Similarly, if he expects a bear market, he might reduce the beta of a stock portfolio. For a portfolio consisting of stocks only, changing the beta of the portfolio involves selling some stocks and buying others. For example, to reduce the beta of the portfolio, the manager would sell high beta stocks and use the funds to buy low beta stocks. With transaction costs in the stock market being relatively high, this procedure can be expensive.

Portfolio managers have an alternative way. They can use stock index futures to create a combined stock/futures portfolio with the desired response to market conditions.

Investments are exposed to both systematic and unsystematic risk. Systematic risk is caused by common market factors that affect all investments. Unsystematic risk results from factors that are unique to a particular investment or a group of similar investments. While it is possible to eliminate unsystematic risk using diversification, no amount of diversification would enable avoiding the systematic risk. Studies show that a random selection of 20 stocks will create a portfolio with very little unsystematic risk. Portfolios considered here are assumed to be well diversified and, therefore, having no unsystematic risk.

However alternatives are available to reduce or avoid systematic risk. It is possible achieve zero systematic risk by creating a portfolio comprising stocks and stock index futures. A risk minimizing short position in stock index futures is combined with a stock portfolio (that has systematic risk only) to achieve zero systematic risk. Such a portfolio should earn a risk-free rate. It is also possible to retain a part of the systematic risk by hedging only the remaining portion of the systematic risk. The combination of stocks and stock index futures can also be used to increase the systematic risk of a portfolio.

To eliminate the systematic risk, the manager creates a short position in stock index futures that matches the long position in stocks. If the intention is not to eliminate but reduce the systematic risk, the manager can adjust the short position in the stock index futures. For example, if it is desired to reduce the systematic risk of the stock portfolio by half, the manager would sell half the number of contracts that are required for a risk minimizing hedge.

Stock index futures can also be used to increase the systematic risk of a stock portfolio. In such a case, a long position is created in the stock index futures. If a long position is created in stock index futures that matches the long position in the stock portfolio, the combined portfolio will have a systematic risk that is double the systematic risk of the stock portfolio.

(iv) Hedging with foreign currency futures

An Indian importer enters into a contract with a US exporter on January 1 to purchase 1,000 personal computers (PCs). The payment is to be made in US dollars after three months. Each PC will cost \$500. The importer is concerned that the dollar will strengthen over the next few months. The current three month forward rate of dollar is ₹ 46 per dollar. Based on this rate, the expected cost of PCs is ₹ 23,000,000. The importer hedges by buying futures on dollar.

The three month futures price of dollar is ₹ 45.50. The importer buys two contracts of \$2 50,000 each at the futures price costing ₹ 11, 375,000 each.

After three months, the spot rate of dollar is ₹ 47.75. The importer buys 5,00,000 dollars in the spot market entailing a cost of ₹ 23,875,000. This is ₹ 8, 75,000 more than the expected cost at the time of the contract.

After three months, the futures contract is priced at 47.50. The importer sells the two futures contracts realizing ₹ 23, 750,000. The gain on the futures contract is ₹1, 000,000 (23,750,000–2 × 11,375,000).

The profit on the futures contract more than offsets the higher cost of PCs leaving a net gain of ₹ 125,000 (₹ 1,000,000–₹ 875,000).

The hedge will be successful in reducing some of the loss in the spot market if the spot and futures rates move in the same direction. If the dollar had weakened, there would have been a loss on the futures contract which would have offset some or all of the gain in the spot market.

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6.8 SUMMING UP

- Foreign exchange exposure is a measure of the potential for firm's profitability, net cash flow and market value to change because of a change in exchange rates.
- Foreign exchange risk is the risk that the domestic currency value of cash flows, denominated in foreign currency, may change because of the variation in the foreign exchange rate.
- The various types of foreign exchange exposure are:
 - o Transaction exposure
 - o Economic exposure
 - o Translation exposure
- Whenever a foreign currency is transacted, there will be certain risks involved at the time of entering into transaction and at the time of realization of the cash of the transaction due to the difference in time period. This is due to the exchange rate movement that resulted into change in the domestic currency value of the transaction.
- Transaction exposure arises due to unpredictable movement of exchange rate and the open positions in assets or liabilities or both. Therefore, hedging involves entering into a financial counter-transaction to offset the risk associated with long or short unhedged positions in a foreign currency at a future point in time.

Check Your Progress

11. What is the objective of hedging?
12. What is interest rate swap?
13. What are currency futures?
14. What are currency options?
15. What is netting?

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- Money market hedge involves mixing of foreign exchange and money markets to hedge at the minimum cost. It involves taking advantage of the disequilibrium between money and foreign exchange market.
- Future is a standardized instrument. Therefore, while hedging with futures one must ensure that the hedge will not exactly match the transaction in size and maturity.
- The objective of operating exposure management is to predict unexpected movements in exchange rates and find out the effect of this movement on the firm's future cash flows.
- An MNC may resort to diversification to hedge the operating risk. It would require forecasts on exchange rate, inflation rate and interest rates.
- Operating exposure can be managed by changing the operating policies.
- Hedging refers to a technique to transfer the risk. It is used to avoid any worsening of an exchange position; an importer can hedge an international transaction by trading in the foreign exchange market.
- Forward exchange cover is created to hedge foreign currency loans taken by companies.
- Forward Interest Rates Cover offers an opportunity to lock in for a future date and interest rates in a volatile rate environment.
- The short-term source of finance is the credit market. In the international trade, trade finance is provided in the form of the letter of credit (L/C).
- Various types of export finances often carry an interest rate subsidy and are offered directly to overseas importers or domestic exporters by the financing agencies.
- Currency options are basically rights given to the buyers of Foreign Currency to buy or sell a specific amount of foreign currency at a specific exchange rate (the strike price) till a specific date when the contract expires.
- A firm having exposures to pay foreign currency can make payments in advance prior to due date called 'leads' in order to take advantage of a lesser rate of foreign currency. If the firm delays the payments over the due date to take advantage of the exchange fluctuation it is called 'lags.'
- A stack hedge is also used to cover the risk of a sequence of payments over a long period of time.
- A macro hedge is a futures position designed to hedge the combined risk of many assets and liabilities (e.g., a multinational corporation using currency futures to hedge the currency risk of its net receipts/ payments, i.e., receipts minus payments of different currencies).
- Hedging with interest rate futures is easy when the characteristics such as coupon and maturity of the hedged instrument and the hedging instrument match.
- The value of stock portfolios varies with changes in the market index. The change in the value of the stock portfolio depends on the beta of the portfolio determined using the Capital Asset Pricing Model (CAPM).

- To eliminate the systematic risk, the manager creates a short position in stock index futures that matches the long position in stocks. If the intention is not to eliminate but reduce the systematic risk, the manager can adjust the short position in the stock index futures.

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6.9 KEY TERMS

- **Hedging:** It is the process of making an investment to reduce the risk of adverse price movements in an asset.
- **Currency swap:** It is an agreement to exchange fixed or floating rate payments, in one currency for fixed or floating payments in a second currency plus an exchange of the principal currency amounts.
- **Currency at premium:** A currency is said to be at premium against the another currency if it is costlier in the forward.
- **Cap:** It is a series of call options on interest rate covering a medium- to- long term floating rate liability.
- **Floor:** It is a put option on interest rate.

6.10 ANSWERS TO ‘CHECK YOUR PROGRESS’

1. Foreign exchange exposure is the sensitivity of the real domestic currency value of assets, liabilities, or operating incomes to unanticipated changes in exchange rates.
2. Foreign exchange risk is the risk that the domestic currency value of cash flows, denominated in foreign currency, may change because of the variation in the foreign exchange rate.
3. Transaction exposure arises due to unpredictable movement of exchange rate and the open positions in assets or liabilities or both.
4. The various hedging techniques to manage transaction exposure are:
 - Forward contract
 - Money market hedge
 - Future contract
 - Currency option hedge
 - Currency invoicing
 - Exposure netting
 - Currency risk sharing
5. Money market hedge involves mixing of foreign exchange and money markets to hedge at the minimum cost. It involves taking advantage of the disequilibrium between money and foreign exchange market.
6. Currency options give the individual the right to exercise a buy or sell transaction of a currency and the purchaser of the option is not obliged to exercise the right that he has purchased after paying a premium. In case of hedging with options, the option is exercised and the hedge comes into operation if the prices surpass

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- the expectations. This type of hedging is usually resorted when non-performance of contract is expected.
7. There are four methods of translation of balance sheet:
 - (i) Monetary and non-monetary methods
 - (ii) Temporal methods
 - (iii) Current and non-current methods
 - (iv) Current rate method
 8. Change in the value of a company that accompanies an unanticipated change in exchange rates is called economic exposure risk.
 9. The objective of operating exposure management is to predict unexpected movements in exchange rates and find out the effect of this movement on the firm's future cash flows.
 10. Operating exposure can be managed by changing the operating policies, which are:
 - (i) Using leads and lags in payments
 - (ii) Sharing currency risk with customer
 - (iii) Using a re-invoicing centre
 11. The objective of hedging or risk management is to transfer risk from one individual or corporation to another individual or corporation.
 12. An interest rate swap is an arrangement whereby one party exchanges one set of interest rate payments for another.
 13. Currency future is a future contract to exchange one currency for another at a specified date in the future at a price that is fixed on the purchase date.
 14. Currency options are basically rights given to the buyers of foreign currency to buy or sell a specific amount of foreign currency at a specific exchange rate (the strike price) till a specific date when the contract expires.
 15. Netting is a concept of setting up the net amounts owned or amounts as a result of trade within the firm, i.e., between MNC parent company and its subsidiaries.

6.11 QUESTIONS AND EXERCISES

Short-Answer Questions

1. What are the risks a company is exposed to in the financial market?
2. What are the hedging techniques one can use to manage transaction exposure?
3. What are the ways to manage translation exposure?
4. Write a note on operating exposure.
5. What is currency exposure? Give examples.
6. What are the features of interest rate swap?

Long-Answer Questions

1. Define and illustrate transaction exposure.
2. Define and illustrate economic exposure.

3. Explain translation exposure.
4. Explain the use of forward contracts in hedging forex risk.
5. What are foreign currency options? How do they help in the forex risk management?
6. Explain money market operations for hedging forex risk.
7. What are the hedging strategies an importer can employ to avoid risk? Explain.
8. Why is economic exposure considered the most risky? Explain.
9. Discuss how hedging in currency futures market is possible.

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6.12 REFERENCES AND SUGGESTED READINGS

- Rajwade, A. V. 1995. *Foreign Exchange, International Finance and Risk Management*, New Delhi: Academy of Business Studies.
- Apte, P. G. 2010. *International Financial Management*. Noida: Tata McGraw-Hill.
- Bhalla, V. K. & Shivaramu, S. 1996. *International Business: Environment and Management*. New Delhi: Anmol.
- Baker James C. 1998. *International Finance: Management, Market and Institutions*. New Jersey: Prentice Hall.
- Haskin Mark E. 1996. *International Financial Reporting and Analysis*, Chicago: Irwin.

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